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James Good
M.D. Phil
1811

The Stomach (which is y^e Father of y^e Family)
chief if not y^e sole agent on whom Food
Medicine can be productive of y^e least
vice to man - Can it be supposed when
a person gets drunk by Wine or Spirits
that any of it gets immediately into y^e Blood
is it by the consent of parts that the
mor at that time deprives Man of
reason -

A

DISSERTATION

UPON THE

NERVES;

CONTAINING

AN ACCOUNT,

1. OF THE NATURE OF
MAN.2. OF THE NATURE OF
BRUTES.3. OF THE NATURE AND
CONNECTION OF SOUL
AND BODY.4. OF THE THREEFOLD
LIFE OF MAN.5. OF THE SYMPTOMS,
CAUSES AND CURE OF
ALL NERVOUS DIS-
EASES.

By W. SMITH, M. D.

*And the Lord God formed Man, of the Dust of the Ground; and
breathed into his Nostrils the Breath of Life: and Man became a
living Soul. Gen. ii. 7.*

L O N D O N:

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M.DCC.LXVIII.



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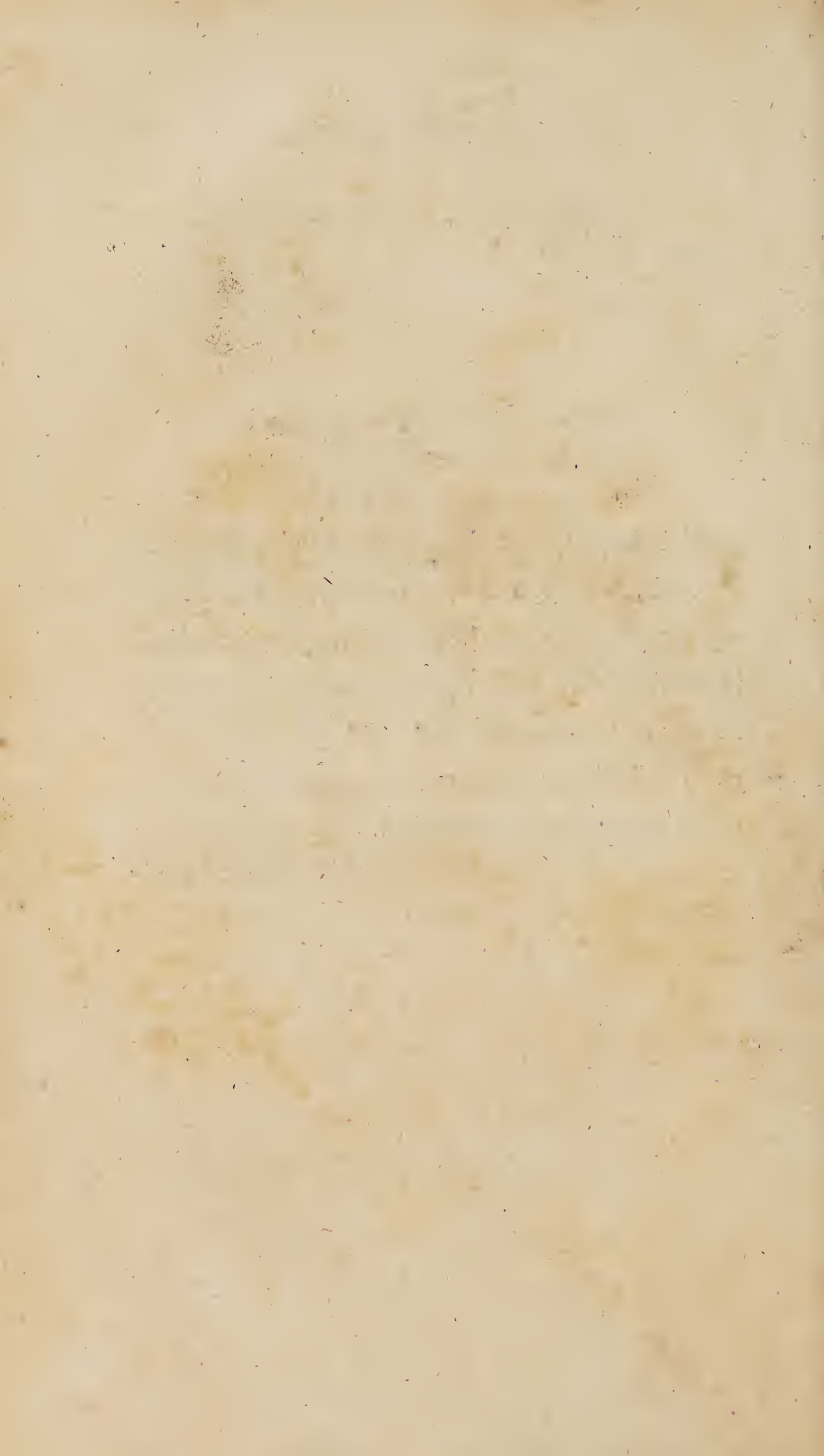
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IT is hoped, that the candid Reader will not look, with too severe an eye, upon the few typographical errors, he may perhaps meet with, in the following Dissertation : in some of the first *Formulæ*, he will find *qut.* and *qnt.* instead of *gut.* ; which mistakes of the printer were discovered too late to be corrected.



S E C T. . I.

C H A P. I.

Of the NATURE of MAN.

IN treating of Nervous Diseases, I shall shew that Man is a compound being ; made up of a material and an immaterial part ; having a necessary and mutual dependance, connection, and influence upon each other ; so that a change in the one necessarily induces a proportionable change in the other : And in the next place I shall consider the nature, manner and consequences of that dependance, influence and connection : And lastly, lay down some rules and methods of restoring the animal œconomy to its regular standard, when lost or impaired by any disease called NERVOUS.

The immortality of the Soul is so clearly revealed in Scripture, and the truth of the

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Scriptures so clearly and incontestibly proved ; that this doctrine is not capable of greater evidence and certainty, than it is supported with from this quarter. I shall however pass over those texts, that clearly reveal the distinction between Soul and Body, as being of different natures and perfections, the one material, perishable, and liable to external injuries ; the other immaterial, immortal, and impassible : neither shall I take the assistance of the arguments that might be urged, from the consent of mankind ; which shew it either to be the voice of Nature ; or, which is much the same, the remains of an universal tradition, from the first man. All that the design of this performance requires of me, is to consider some of the proofs and arguments that are drawn from reason, and to shew, that from the principles of philosophy, we are either obliged to believe the existence and immortality of the Soul, or to give our assent to absurdities and contradictions.

First. I need not go about to spend time in proving, that we all bear about us a body, with modes, properties, and qualities, common

common to the whole mass of matter, such as extension, bulk, figure, &c. as there is no sceptic so wild as to deny it. Consciousness and experience, the best proof in the world, shew us that we have a thinking principle within us, to direct our actions, endowed with modes, properties, and qualities, of a peculiar nature, such as judging, reflecting, perceiving, &c.

Now, I believe there is no greater demonstration of any two things being of different natures, than, to shew, that the modes, properties, and qualities of the one, are inconsistent with, entirely different from, and cannot, without absurdity and contradiction, be affirmed of the modes, properties, and qualities of the other. There is no greater evidence of the certainty and truth of any proposition, than to demonstrate the contrary both absurd and contradictory. This is allowed in *mathematics*, a science that admits of the greatest certainty under the sun. EUCLID thinks there cannot be a better proof that a *square* is not a *circle*, or a *circle* a *square*, than that the properties of a square cannot be affirmed of the proper-

ties of a circle, nor the properties of a circle affirmed of the properties of a square, without absurdity and contradiction. If then the properties of body cannot be applied to the properties of that thinking principle within us, nor the properties of the thinking principle within us applied to the properties of body, without absurdity and contradiction; then it necessarily follows, that that thinking principle within us cannot be *body* or *matter*, but if it is not body and matter, it must be *Soul*, and *immaterial*.

The properties of the thinking principle within us, are perception, thinking, willing, &c. and what flow from them, as comparing, judging, doubting, denying, &c. The properties of body are, figure, bulk, extension, weight; and such as result from these, as softness, hardness, roughness, &c. Now let us, or any man examine, whether the properties of the thinking principle within us, are any way consistent with the properties of body, or can be applied to them, without absurdity and contradiction. Hath a perception or reflection, any figure or bulk?

bulk? Can we say, a scarlet judgment; an oblong doubt; a square denial; or a reflection of a foot long, or of a pound weight? If this cannot be said, without absurdity and contradiction, then it follows, that the thinking principle within us is of a nature as different from body, as its properties and affections are, from the properties and affections of body; that is to say, the thinking principle within us, called soul, is of a quite different nature from body: but the body is not immaterial, but material, or matter; therefore the soul is not material, or matter, but immaterial, or spirit.

It is objected to this, that though thinking is not a property, mode, or affection of matter, as such, yet God can superadd a power of thinking, to a system of matter rightly disposed.

That God can superadd to any body, something that is not body, is what none that believe in a God, can deny; so hath he added a reasonable soul to these bodies of clay which we carry about us: but to say, that matter has a power to think, of itself, from some new property, which observation

tion and experience hath not discovered to belong to it, is highly absurd and unjustifiable: it is contrary to the laws and rules of philosophy, and common sense, to ascribe any property to any thing that neither observation nor experience hath ever found to belong to it.

No composition of matter and motion, or any of their affections, can be made to think as that immaterial substance, in man, called Soul, doth: because it is impossible, in the nature of things, that matter and motion, in themselves incogitate and senseless, can become cogitate and sensible, by division and change of place; which is all that motion can produce in any unorganized system of matter, in order to receive or become a spiritual, immaterial, thinking *essence*. Divide matter, ad infinitum, subtilized to the highest degree, after all, it still remains matter; its *essence* it still preserves, and continues foreign to the capacity of thinking: Bodies may be changed as to their form, yet none can be changed in their *essence*; for the greatest and firmest parts in our bodies, are constituted of the very
same

same matter with that which is smallest or least firm : for example, the greatest and hardest bone is made up and consists of the same matter with that of the lymphatic vessels. Air is between eight hundred and a thousand times lighter than water ; and Mr. Boyle has proved, by experiments, that it may be thinned fourteen thousand times more than what it is upon the earth's surface, without heat, and vastly more with ; yet no body, in his senses, ever dreamed, that air, in its most rarified state, differs in its essence from what it is in the gross.

Matter is capable of infinite division and addition : there may be systems of bodies of all sizes, from infinitely small, to infinitely great ; the Stars may be considered as a system of bodies infinitely great ; and Light, a system of bodies infinitely small, and how many other such systems there may be, none can tell. Matter may descend, ad infinitum, in tenuity and subtilty, and a few of the first steps we may go, in this infinite progression. I do not mean infinite, in the highest degree, but indefinite, or infinite,

nite, in a relative sense, in regard to a finite capacity. The works of God are inscrutable to perfection; mercury is grosser than water, water than air, air than light, light than æther; and how far further nature may go, in descending in tenuity, subtilty, and refining, none can tell. The analogy of things, the infinite divisibility, and encrease of matter from finite, till it comes to infinite, great or small, (relatively speaking) shew that Nature never passes from positive to negative qualities; till it goes through the medium of nothing, or infinite small of the same denomination: it never passes from motion to rest, but thro' infinitely small motion. So that matter observes, or is subject to the same laws, in all its divisions, however far it may be subtilized beyond the ken of our senses. Therefore, it is impossible to conceive, how thought should arise from an organized body, independant of an immaterial substance. Hence thought and matter give us an idea of different substances, and it necessarily follows, that *that thinking essence*, SOUL, is immaterial, and must necessarily reside somewhere in the body, where the organs of the
several

several senses terminate, and that seems to be in the *Sensorium*. The large size, the wonderful texture, great care and security, the God of nature has employed about the Brain, make it highly probable, that it is designed for the noblest uses, the Temple, Tabernacle, or Dwelling-house of *that immaterial Being, that immortal Guest, that Spark of the Deity, that Breath of Life, the Living Soul of Man.*

Again, if the principle of both parts of this compound was one, or if the whole had but a material or organical principle, or if there was only an external spring of motion and action ; then the whole would die, expire, and be extinguished, as soon as the functions die, expire and go down. But the contrary of this is evident, from the latent principle of animation remaining, after all the sensible signs and functions of life cease. For life and animation are impossible and a contradiction to mere mechanism, that is, to matter acted by the determinate laws of motion, and in proportion to the surfaces of bodies. Indeed the self-moving, self-active, and living principle

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ple concurs with, and homologises to mechanism, in the animal functions, and operations ; which take place according to its own laws. Mechanism is actuated by animated, living bodies, or spiritual substances ; and this self-moving, self-acting principle, cannot act harmoniously, or according to the intended uses, and purposes, upon an unfit, unfinished, or unorganised body, as afterwards I shall have occasion to prove.

It appears to me, says Dr. Whytt, (who has been accused of materialism, and indeed I cannot vindicate his doctrine from these unhappy conclusions, (though I verily believe he did not see them) unphilosophical, to attribute active powers to what, however modified, or arranged, is yet no more than a system of matter. Matter cannot of itself, by any modification of its parts, be rendered capable of sensation, generating motion, or thinking. Matter, as far as we are able to judge of it, by all its known properties, appears to be incapable either of sensation, or thought : and the whole phenomena of the mere material world evidently shew that it acts invariably, according to certain

certain laws prescribed to it, add without any feeling, inclination or choice of its own : nor is there any thing more resembling will, self-determination, or real active power in the most refined, and subtile parts of matter, than in the grossest, and most sluggish. The body only is a covering, armor and defence to the soul. When the eye is in danger, the soul shuts the eye-lid ; when the head, or other part is in danger, the soul raises the hand in its defence ; and of this body the soul has as great care, as, man has of the house, in which he dwells. In another place the Doctor says, Matter, of itself unactuate by any higher principle, is equally as incapable of sense or perception, pleasure or pain, as it is of self-motion. Fire is as incapable of thought or reflection, as water or earth : and it is impossible, that self-motion, sense, or reason can possibly result from the figure, connexion, situation or arrangement of the various parts of the body.—From these two quotations it is evident the Doctor did not believe the materiality of the soul : yet the conclusion, that necessarily flows from his doctrine of

vital motion, is the divisibility of the soul, consequently its materiality.

Dr. Brown, in his *Proceedure of the Human Understanding*, says, p. 165, “ The
“ question so much debated, and so tediously
“ pursued by some, *Whether God by his Al-*
“ *mighty power can superad to our idea of*
“ *Matter a faculty of thinking?* is shame-
“ fully trifling and frivolous, unbecoming
“ men of common sense, but much more
“ philosophers and metaphysicians. The
“ very question supposes that matter hath
“ nothing of thinking in its *own nature*,
“ and this is readily owned by them; be-
“ cause of the plain consequence; that of
“ thinking was natural to matter, then
“ every particle and every system of it
“ would think: so that the question can
“ have no more meaning in it than this,
“ *Whether God can alter the very nature*
“ *of matter, so that it shall be matter and*
“ *not matter at the same time?* *Whether*
“ *he can make the same thing to be a*
“ *thinking and unthinking being at the*
“ *same time?* To make the question sense,
“ it must be, *Whether God created matter*
“ with

“ with an aptitude and capacity to think,
 “ in a particular texture and combination
 “ of its particles into any system whatsoever,
 “ ever, or by the addition of any particular
 “ motion added to it? But if so, then
 “ thinking would be a *primary, essential*
 “ quality of matter, whenever it subsisted
 “ under that particular requisite disposition
 “ or motion of parts; and then again, do
 “ but change this disposition of its parts,
 “ and put them into another motion and
 “ situation, which are things merely accidental
 “ to it, then it loses that essential
 “ quality of thinking. And thus the same
 “ faculty shall be essential and not essential,
 “ accidental and not accidental to the same
 “ thing. So that now the doubt is necessarily
 “ resolved into the first senseless question
 “ again, Whether Almighty power
 “ cannot superadd to matter an essential quality
 “ which is unnatural to it? If men
 “ should give themselves to starting such
 “ questions about every thing in nature
 “ and religion, whether Almighty power
 “ cannot alter every thing from what it
 “ is, and make it something else, what
 “ jargon would they make of philosophy
 and

“ and divinity ? The true question is what
 “ Almighty power *hath* done, and not
 “ what it *can* do ? Sure they must be very
 “ zealous for the materiality of the soul
 “ who raise a question, whether God may
 “ not interpose his Almighty power to work
 “ against nature and alter the general laws,
 “ properties and course of it in every man
 “ that is born ?” Another learned gentle-
 man says “ the most obvious idea we have
 “ of matter, is an *extended impenetrable solid*
 “ *substance incapable of moving itself, or of*
 “ *being moved, but by the agency and im-*
 “ *pression of some superior external active cause.*
 “ From whence it will undoubtedly follow,
 “ that mere matter, however modified, ex-
 “ alted or purified, will be as incapable of
 “ self motion, as it was in its lowest state
 “ of density or depression ; and conse-
 “ quently cannot by any power, be trans-
 “ muted or sublimated into a living self-
 “ moving substance. Matter indeed is sus-
 “ ceptible of motion or capable of being
 “ moved, but the motion itself must pro-
 “ ceed from something distinct from and
 “ superior to matter : For the omnipotent
 “ Creator, if we may so say, cannot make
 “ matter

“ matter think, because it destroys its ef-
 “ fence and changes the essential properties
 “ of it ; and omnipotence itself cannot pro-
 “ duce impossibilities, cannot effect con-
 “ tradictions, cannot make the same thing
 “ to be and not to be at the same time ;
 “ cannot make a substance, which, as so-
 “ lidly extended, must resist all change of
 “ state, become life, sense, and spontane-
 “ ous motion ; for that is directly affirm-
 “ ing, that the same portion of matter,
 “ which is unactive, dull and dead, may
 “ be, at the same time, living, sensible and
 “ spontaneously moving. Therefore what-
 “ soever begins motion, where it was not,
 “ and stops it, where it was, that effects a
 “ change from rest to motion, and from
 “ motion to rest, and that arbitrarily can
 “ never be matter, whose essential property
 “ is an indifference to motion or rest.”

Again, the power of numbers and Geo-
 metry joined to the assistance of mere me-
 chanism, that is, foreign impressed motions,
 according to certain laws, and in propor-
 tion only to the surfaces of bodies, may
 and do account for the appearances of
 vegetation,

vegetation, but can never account for animal life, in the lowest insect.

For the bodies of brute animals are actuated, by a principle of the like kind, with that placed in man, but inferior with regard to the degrees of reason and intelligence which it possesses. In the more perfect brutes, this principle is plainly intelligent, as well as sentient ; and their actions evidently shew them to be endowed, not only with a strong memory, but with reflection and some degrees of reason.

It is really wonderful to see, that there are any to be found, that can seriously believe, that these are machines formed entirely of matter, and, as it were, so many curious pieces of clock-work, wound up, and set a going ; and that the actions of the most perfect brutes, are the result of mere mechanism. In the inferior orders of brutes, the appearances of reason, and reflection, are more obscure ; and in the lowest species of animals, there are no marks of intelligence ; nor do we observe them to differ otherwise from vegetables, than as they

they are endued with some degree of sensation and selfmotion. But in all brutes, even in the very lowest kind of them, there is evidently a sentient principle. But the soul of man enjoys all the powers and faculties, belonging to the souls of inferior creatures, and has reason, in a much higher degree, superadded to these powers. So that the soul of man differs from that of a brute, viewed in one light, as the finest, most perfect and completely adjusted and proportioned machine, to a clumsy, ill-contrived, ill-proportioned one. But the grand and fundamental difference, that distinguishes the soul of man, from that of a brute, is the divine influence, the operation of the Holy Ghost, the principle of immortality, whereby we cry *Abba Father*; whereby we become heirs of God and joint heirs with Christ, whereby we are intitled to the kingdom of heaven. This distinguishing principle is, what Adam received, when God breathed into his nostrils the breath of life; which would have preserved his soul to all eternity; if the Almighty had not immediately interposed to annihilate it. But more of this after-

wards, when I come to consider the three distinct lives of man.

God Almighty, as I observed before, can constitute a new kind of matter, distinct from all other kinds of matter; and to it superad the faculties, we discover our souls to be possessed with. But then, these faculties are not in matter, but superaded to matter. And if God Almighty makes matter to think, yet 'tis impossible, in the present state of things, he should oblige us to believe it. Because it is contradictory to all the ideas, he has given us of matter. The idea all mankind have of matter, is, that it is a lifeless, extended, unactive, passive principle; and the idea they, at the same time, have of the thinking principle within, is, that of an active, living, unextended principle. So that, these two are directly opposite, and as plainly inconsistent, as light and darkness. 1st. We move and reason from ourselves, which plainly implies the power of motion within ourselves; but this is a power absolutely inconsistent with the passive, inert nature of matter; called *vis inertiae*. Therefore, as long as
our

our first idea of matter includes in it a passive inert nature ; it includes also an utter incapacity of thought.

Again, freedom and liberty to act, or cease from action, to apply ourselves to contrary motions, and purposes, is a clear argument against the materiality of the soul. For all matter, as far as can be perceived, by the most discerning, and curious observers of nature, is acted by certain, fixed, and invariable laws of motion : and therefore, it is utterly unintelligible, absurd and contradictory, to say, that a necessary passive principle, tied down to known necessary laws, can be the source of that freedom and spontaneity, we feel in ourselves. Hence we are brought to assert, that contradictory and inconsistent properties, may subsist, in the same subject, activity and inertness, freedom and necessity.

2dly, It is evident, that the affections of matter, are inseparable from figure and extension. Nor can we conceive it possible, even for the Almighty, to superad any new property of matter, that is not neces-

farily connected to these two; that is, to create matter, without figure and extension. Therefore, if thought and its modes be superadded to matter, they must be figured and extended. But I appeal to experience, and the observation of all mankind, whether they are so or not. Hence we run ourselves upon the absurdity of saying, that, tho' all the properties of bodies are inseparable from figure and extension; yet, the soul is a body, with properties, that have no relation to, and are entirely devoid of figure and extension.

3dly, If there be any such thing, as a thinking system of matter, I believe it will be allowed, that it is what we carry about us. But, I think, it is evident, that this body of ours, neither thinks in the whole nor in its parts; for consciousness and reflection are essential to thought. Therefore, if this body thought, it must necessarily be conscious to itself, that it did think; whereas it is so far otherwise, that we are conscious to ourselves, and convinced that it doth not think. Hence we are forced to conclude, that there may be such a thing,

as a thinking system, devoid of consciousness, and reflection ; that is, a thinking system that cannot think.

Lastly, I believe it will be allowed, that our ideas or thoughts are immaterial, that is, are not bodily substances. Who ever thought there was any thing corporeal, in a judgement, a doubt, &c ? If our thoughts are corporeal, where could they be lodged ? how infinitely complicated and extended must that material Soul be, to be able to contain those immense volumes of learning, which some men have treasured up, in their Souls ? If, therefore, our ideas be immaterial, as most certainly they are, then let any man tell, if he can, or even imagine, how they can arise from a material subject, or be repositied in it.

From all these propositions, and each of them in particular, 'tis clearly evident, that this thinking principle within us, called SOUL, is immaterial, that is, not body. But if immaterial, then indivisible, for divisibility is an affection of matter. And if indivisible, then it is one uncompounded essence :

fence. Then it is incapable of any injury from without ; that is, cannot be burned, bruised, pierced, or torn afunder ; for all these imply parts and divisibility. Nor can it suffer, from the fermentation, and conflict of jarring principles within, for that too would imply a composition. And if it is liable, neither to injury from within, nor from without, it is immortal, capable only of being destroyed or annihilated, by God Almighty alone.

Some perhaps will be ready to observe, that, as I affirm the bodies of Brute Animals to be actuated by a principle of the like kind, with that placed in Man ; therefore the Souls of Brutes must live for ever : and indeed it is a very necessary inference, and what is my real opinion. For an immaterial substance is not subject to the laws of mortality ; and perishes only by the immediate annihilating hand of its Maker, the Almighty God, the Lord Jehova.

This is not a new doctrine, though to many it may appear to be so. Some of the most learned Primitive Fathers, in the early
ages

ages of the church, thought so ; and some of the gentile Philosophers were of the same mind. How God will dispose of the souls of brutes, after death, is not revealed to us ; consequently we are entirely ignorant of it, as we know nothing of any life, but what is revealed to us. Perhaps God Almighty will annihilate them ; and perhaps he will suffer them to follow their own nature, and live for ever. This I know, that the Almighty hath appointed certain laws to bodies, which he never seems to violate, by an uncommon or supernatural influence, except for some very great purpose. Some quote Ecclesiastes, ch. iii. v. 21, ‘ Who knoweth the spirit
‘ of man that goeth upward, and the spirit
‘ of beast that goeth downward to the
‘ earth ? ’ to prove that beasts perish after death. The text, indeed, makes a distinction, between the soul of a man, and that of a beast ; and plainly declares, that they go to separate places ; but, I think, it does not declare, that the soul of a brute perisheth, any more than that of a man. But what places of abode are allotted to them,
or

or where, is more than I or any mere man can tell.

Many Divines, with more zeal than reason, have been very solicitous, to prove, that brutes have no soul, thinking that the contrary opinion derogates from the dignity of man. But when the creation was finished, God saw that all was good ; therefore, I think, it is no reproach to an archangel, to say, that God made a worm as well as him. Those zealous divines, that contend for the materiality of brutes, are reduced to such absurdities, which would make a modest man blush ; but that is an affection of matter which one part of their bodies, viz. the face, is little accustomed to. This I think, that if the Parson gets his old gray mare to ride upon, in the other world, she should, for his contemptible opinion of her, in this life, throw him into the dirt ; where I should take the liberty to leave him, and proceed to my next consideration ; but this subject is so pleasing and entertaining, that, for all the haste I am in, I shall stop a little here, and briefly consider the nature of brutes.

C H A P. II.

Of the NATURE of BRUTES.

AN understanding no doubt Brutes have, of such a kind and degree, as is sufficient, at least, for their state and rank in the universal system, and the several duties and offices, for which they were intended by their Creator. Some of them discover almost more reason and understanding, than some, that carry about the human form. Upon this principle, we treat our domestic animals ; we correct them, when they do amiss, and caress them, when they do well.

They are sensible of pain and pleasure ; which they discover, by gestures, looks and sounds ; and are endued with every perfection, that their rank, in the scale of beings required. What absurdity or heresy then is there in supposing, that the same Infinite Power, that could form the body of the most minute insect, with such exquisite proportion and beauty, could, at the same

E time,

time, with the same ease, provide a proper inhabitant, to animate and govern it, and answer all the purposes of its creation? Is it impossible? Does revelation forbid it? I am sure that 'tis so far from it, that the scriptures plainly declare the contrary. And it will appear, upon the strictest and closest enquiry we can make, into all the brute creation, that they act by some principle, equivalent or analogous, to what we call *understanding* in ourselves. If then, by the strength of their understanding, they think, reason, project, contrive and perform the offices, within their proper sphere, in a just and due proportion, to what we do in ours; they must be allowed to have some immaterial principle within them. For the same uniform effect must be produced by the same uniform cause in both; and what is the terrible consequence of all this?

As beasts have understanding, so they have a language, or method of communicating their knowledge, advice and assistance to each other. If they could not understand or be understood by each other, they could neither give nor receive any com-

comfort, assistance, or help from society ; and without such a communication, it would be absolutely impossible for such a society to subsist. In a word, no more communication, no more society. It is impossible that the turtle, that is fond of his mate, should be at a loss for proper expressions to discover the tenderness, the jealousy, the anger, the fears, he entertains for her ; in the several incidents of life, that must arise betwixt the most loving couple, in the course of a long cohabitation. He must scold her, when she plays the coquet ; he must bully the sparks, that make attempts upon her virtue ; he must be able to understand, when she calls to him, &c. Enter into a wood, where there are a parcel of jays, the first that sees you, gives the alarm to the whole company. Let a cat shew herself in a garden, the very first sparrow or swallow, that perceives her, warns all his companions. Many thousand examples might be produced to prove that brutes have a power of expressing their ideas, and sentiments, to each other. Is it not offering violence to reason, nature, and common sense ? Is it not making a mock

of God's creatures? to say that they are either animated by evil spirits, or that they are mere machines. Sure I am the scriptures, and most ancient philosophy, treat this subject in a very different manner. Moses declares that they have living souls, Gen. i. 29, 30. On this account it is, that the scriptures every where represent them, as objects of divine care and compassion; as depending upon him for the support and sustenance of that life, which he has given them. Job. xxxiii. 41. Psal. civ. cxlvii. ver. 9. Mat. vi. 26. Man, in his state of innocence and glory, stood in the place of God, to the world below him, cloathed with all the beauties and blessings of paradise. Thro' him were derived all the blessings, of that happy state, to all the different species, tribes and families of the animal creation. But man, by his fall, forfeited both for himself, and them, all the blessed privileges of paradise; and upon the transgression, an universal sentence of condemnation went out against the whole system. The whole universe suffered, in every article of its nature, in such a manner, as one would think nothing, but some universal

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fal guilt, and entire corruption and degeneracy, could poffibly deferve fuch a judgment.

But when Man, by his fall, had interrupted all the fources and channels of divine communications; he had no bleffing to receive, therefore none to beftow. No wonder therefore that the whole fyftem of creatures below him, who were his fubjects, domestics and dependants, are deeply affected by his fall; and fhare in his punifhments. The whole fyftem of the vifible creation fympathizes, and fuffers with their rebellious Lord; fo the Epiftle to the Romans tells, chap. viii.

The ftate of the Brute Creation, therefore, has, ever fince the fall of Man, been very different from what it was at firft. They are guiltlefs of our tranfgreffions, and fhould be the unhappy objects of our care and compaffion. And it is a breach of natural juftice, an indication of a cruel and unnatural temper, to abufe and opprefs them; to increafe their miferies; aggravate the fufferings of thefe innocent and unhappy creatures; and

and to add, by our barbarity, to the weight of the bondage, to which they are made subject, by our disobedience. The scriptures declare it a mark of our duty to be merciful to the cattle. Proverbs xii. 10. And God himself guards against the cruel oppression of cattle, by the Sabbath days rest, Exod. xxiii. 12. and in the 4th and 5th verses mentions particular acts of mercy, that he requires us to perform to them. And our blessed Lord mentions it as an act of humanity and natural justice, Matt. xii. 10. Luke xiv. 5. And God makes a particular law in favour of the ox that treadeth out the corn. The King of Nineveh, upon the prophet Jonah's denunciation of destruction upon it, proclaimed a fast of three days, for the cattle as well as the people: and God declares his compassion for the cattle, as well as for the people.

But if the souls of brutes are immaterial, as I said before, then the unavoidable consequence is, they must be immortal; which indeed to some will have the appearance of philosophical heresy. But let the appearance be what it will, no truth should
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be stifled for fear of consequences (which is too much the case with those that would be thought the guardians and tutelar angels of true religion; but their fast and loose game let them answer for to God, and justify it, if they can.) I dare pronounce the souls of brutes immortal, from scripture, evidence, reason, and argument. Pray will you be pleased to tell me, what you think was their original state and condition in Paradise; when all the works of God were pronounced very good? Were they mortal then? Could any creature be mortal, before death came into the world? But death was the consequence of transgression, Rom. v. 12. If death then was the consequence of sin, 'tis absurd to suppose that the effect should precede the cause; that the execution should both anticipate the sentence of condemnation, and the transgression. Therefore we are led to believe, that, in the intention of their Creator, by their original frame, and their relation to the universal system, they were to be partakers of that bliss and immortality, which was the privilege of the whole creation. Till man, by his disobedience, forfeited it

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for himself, and in consequence for them. Infinite wisdom created nothing in vain. In the infinite variety of creatures, there was none either superfluous or useless.— Did not God Almighty intend, even the minutest portion of the creation, to be a monument of his infinite wisdom and goodness; by contributing to the beauty, order, and harmony of the whole? then the preservation of the species was necessary to perpetuate the harmony of the whole. What probable or possible reasons then can be assigned, for the destruction of the individuals? God's mercies are over all his works. He made them all to be happy, as exquisitely happy, as infinite goodness, wisdom and power could make them; and their rank and state in nature was capable of receiving. And it is not owing to any mutability in the counsels of God, to any fault of their own, that they have lost any degree, of that happiness, they were created to enjoy. But it is the fatal and necessary consequence of the relation, they stood in, to their unhappy rebellious Lord; and the dreadful confusion his disobedience has brought upon the whole visible creation.

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Can we think that infinite mercy, who made them to be happy, in the primary intention of their nature, could deprive them of that happiness, by an utter extinction of their being? To build up and pull down, to create in order to destroy, to do and undo, without any apparent necessity, is a reflection upon common sense. And shall we dare to accuse infinite wisdom, goodness and power, of an infirmity, which a man of common sense would blush to be guilty of? If we were the owners and creators of these animals, would we not be anxious to preserve them? And can we have more regard for our own works, than God has for his? If then we would not wantonly torment and destroy any of God's creatures; neither will he put an end to the being of any creature, whom he hath created, capable of eternal happiness.

Some say, their lives were designed to be temporary and short. But pray who told any body so? where did they learn this philosophy? what reason or religion taught this doctrine? sure I am it is a contradiction to both. The wise Preacher, and the royal
F. Psalmist,

Pfalmist, teach us other philosophy, Eccles. iii. 14. Psal. 104.

If therefore all the works of God are the effect of infinite wisdom. If every, even the meanest, the smallest, the most contemptible creature, was formed and established in its proper rank and order, by the unerring counsel and wisdom of the Almighty. Is it not a bold presumption to impute to that wisdom unworthy and contradictory counsels, inconstancy and mutability? But the Psalmist says, that the original purposes of God, in their creation, shall stand for ever and ever. And whatsoever changes, and revolutions, they may undergo; yet they shall in due time appear again, in their proper place and order; Psal. civ. 30.

If they were intended not only to fill up the several ranks and orders, they stand in, in the universal scale of beings; and compleat the harmony of the universe; but also to have their share in the general bleſs, and such a degree and portion of happiness as they were capable of enjoying. Will any one say, that it would be no punishment to them to be totally deprived

prived of that happiness, by an extinction of their being. You need not tell me, God may do this or that, by his almighty power, without injustice ; and as he created, so he may destroy. This is weak, foolish, and ignorant arguing. God's works are founded upon the immutable principles of infinite wisdom, goodness, and truth. Jam. v.17. Heb. xiii. 8. Therefore the omnipotent and omniscient creator, who, from eternity, saw through all the possibilities of being, could not see reason for creating, at one time, and destroying at another time, the works of his own hands.

All the effects of infinite wisdom were designed to answer some end, to serve some purpose ; or they were not. They contributed something, to the beauty and harmony of the whole ; or they did not. They were either useful and necessary, in their several ranks and orders ; or superfluous and useless. If you say, they were made for some end, to answer some purpose : that they contributed to the beauty and harmony of the whole ; it will necessarily follow, that they do so still. Unless you will venture to say, that the system is altered ; that

what was once necessary is not so now : which is absurd and blasphemous. It therefore follows, that, whatever uses and purposes were intended in their creation ; can only be supplied and answered, by still preserving them in being. If you say, they were not the effects of infinite wisdom ; that they were not made to serve any end, or answer any purpose ; that they contributed nothing to the harmony of the system ; is not this both blasphemy and nonsense ? If, therefore, the poor brutes, have no sin to answer for ; and would never have known either pain or sorrow, suffering or death ; had our first parents continued as innocent as they. What then should hinder their continuance in being, after the dissolution of their bodies ? Why may not the immaterial form be disposed of, in its proper state ; waiting for the time of the restitution of all things, Acts iii. 21. when the whole suffering creation shall be delivered from the bondage of corruption, into the glorious liberty of the sons of God. Rom. viii. 21.

Some are at a loss, how to dispose of them after death : but we need give ourselves

selves no trouble and uneasiness about that. God Almighty, that made them, will find out a place for them. Neither need we be afraid ; lest there should not be room in the creation to hold them. Let us trust God with that, and not trouble our heads about it. What is it to us to know, how they will be disposed of ; after the dissolution of their bodies ? Cannot infinite power, which formed them ; without our advice and assistance, dispose of them in the same manner ? What would have become of the numerous descendants of the several species of beings, if Adam had not sinned ; and if death had not entered into the world ? Can we suppose, that he, who made them to increase and multiply ; had not made a proper provision for their reception ? And will not the same wisdom and power, think you, continue the same provision for them still ? When we observe such a wonderful gradation of beauty, form, perfection and proportion, in the several parts of matter ; through the animal, vegetable and mineral kingdoms ; through all the species of fossils, plants and animals, up to the human body : it must appear to a rational and attentive mind, to be

be a wide and unnatural chasm in the nature of things ; if there were nothing between dead matter, and the human soul. Let us not then embarrass ourselves, with doubts and enquiries ; about the purposes and counsels of infinite wisdom, in the creation of such a wonderful and beautiful variety. But let us satisfy ourselves, that, as nothing less than infinite power could produce the least and most contemptible creature into being ; so nothing less than infinite wisdom has formed and directed them, to answer the several purposes of their creation ; and fill their different ranks and states in the scale of beings. And that the same infinite wisdom will not fail to dispose of them hereafter, in the most proper manner ; to answer the original purposes of their creation.

The wonderful gradation, in the scale of beings, is not only the object of daily experience and admiration ; but also a noble key, to open to us the more remote and invisible scenes of nature and providence ; and to raise, upon the foundation of a just and proper analogy, a rational superstructure,

ture, little inferior, in evidence and strength, to a mathematical demonstration.

As we observe, in all parts of the creation, a gradual connection of one with another, without any great or discernable gapes between; for the great variety of things we see in the world, are all so closely linked together, that it is not easy to discover the bounds between them; so we have all the reason imaginable to believe, that, by such gentle steps, and imperceptible degrees, beings ascend, in the universal system, from the lowest to the highest point of perfection. The difference between man and man is inconceivably great. There are some that have very little, besides their shape, to distinguish them from brutes; and one would be almost tempted to think them of a different species. For there is almost as great a difference, among individuals of the same species; as between two out of different species.

That there shall be an universal restitution of all, that fell by Adam's transgression; when all that was lost in the first Adam shall be renewed in the second. That there shall be
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a new heaven, and a new earth, which shall be the habitation of righteousness; God hath abundantly and plainly promised, by the mouth of all his holy prophets; since the world began. Acts iii. 19, 20, 21. Isa. lxxv. 17.—lxxvi. 22. — 2 Pet. iii. 13. — 1 Cor. xv. 21, 22.—Rev. xxi. 1.

And if the whole material world shall be restored to its primitive perfection; if there shall be a renovation of the face of the earth; there must, of consequence, be a renovation of all the seminal powers of all the various productions of fruits, flowers, animals, and all the different inhabitants of the several regions of nature; all the discord of elements, all the malignity of the creatures, shall entirely cease and be done away. All nature shall put off the corruption, deformity, darkness and confusion of its present state; and be restored to the purity, splendor and beauty of their first creation. As the whole system of nature, every part of the vegetable and animal world, were partakers of the original happiness; so they shall, with man, in due time, recover their lost happiness; and return to their primitive

mitive perfection. The certainty of this grand event is evident from many places of Scripture, as Rom. viii. 19, 20, 21, 22. Then Is. xi. 6, 7, 8, 9, shall be fulfilled, & lxxv. 25. And the Prophet Hosea foretells the same, ch. ii. 18. I confess I have dwelt too long upon this subject; but this opens to us such a new scene of wonder and love; which will be the subject of admiration to all eternity; that I could not dismiss it sooner. However, now I shall proceed to consider the nature, manner and consequences of the dependance, influence and connection of the Soul and Body.

C H A P. III.

OF THE NATURE, MANNER, AND CONSEQUENCES OF THE DEPENDANCE, INFLUENCE, AND CONNECTION OF THE SOUL AND BODY.

THE medium, that holds the two distinct substances, soul and body, so closely together ; that nothing but death can dissolve the union ; and is the instrument of sensation ; is a subtile medium, or animal æther, contained in the nerves. We perceive every nerve of the body is affected with a sense of feeling, and they alone ; which is evident, by cutting or dividing a nerve. Immediately the part of the body, where it goes, loses all sensation ; though the blood and fluids circulate as before. And as these nerves are dispersed over all the body ; so every part of the body, we can touch, has a sense of feeling, called *sensation* ; which the nerves, if so and so modulated, carry to the soul, by means of their contained fluid, called *æther*.

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The greater branches of the nerves are forty in number; TEN derive their origin from the brain, whose fibres make up the fibres of four senses, viz. *hearing, seeing, tasting, and smelling.* Though, properly speaking, we have but one sense, which is *feeling.* THIRTY pair arise from the medulla spinalis, &c. and furnish all the other parts of the body with sensation; which would be very acute, and affecting, was it not deadened by a fine carnous *parenchyma.* All objects are let in unto the soul, by being applied, or coming into contact with the nerves; by which, their æther receives an impulse: which, by the collision of their machinulæ, they carry to the common sensorium, situated in the point, where all the nerves terminate. There the soul receives and observes the impression, and forms the idea; there matter ends, and thought begins. But that mysterious boundary between the ending of matter, and beginning of soul, who can exactly describe or delineate?

WHILE the nerves continue justly modulated, and braced, to the standard of nature, the soul is at ease. But if they are faint,

weary, or any ways disconcerted, the soul immediately perceives it, and feels pain. Were the corporeal organs infinitely more subtile, the soul's faculties would be infinitely more active, penetrating, and just.

By means of this connecting medium, the *animal æther*, the various impressions, made on the several parts of the body, not only by external, but internal causes, are transmitted to and perceived by the soul. When a stimulus is applied to the body; it obstructs the due and regular circulation of the nervous æther; which regurgitates back upon the soul, and conveys a perception of pain: which, the soul having received, directs a greater flow of the nervous fluid, to the affected place; in order to remove the offending matter. If the obstruction is great; then, from the nature of obstruction in all fluids, the nervous æther is more accumulated in that place. And the soul, receiving disagreeable sensations from that place, adds its influence likewise; by impelling the nervous fluid more forcibly to that part, in order to remove the impediment. The consequence is, the heart contracts

contracts more forcibly, and at shorter intervals ; the circulation is accelerated ; whence an increased heat and inflammation. If the vessels, by their convulsive throws, disengage themselves of the stimulating and offending matter ; then the dam is broke down : and the circulating æther, before obstructed, returns to its regular circulation. Then the soul receives no disagreeable sensations ; believes its tabernacle in safety, and therefore is at ease. If the obstructed matter is not entirely removed ; then the sense of pain remains ; in proportion to the obstruction. For pain may be eased, and partly removed, without dislodging the offending matter. Thus, as pain arises from a greater flow, and obstruction of the animal æther, to one particular place, than the laws of circulation admit of ; so the other sound parts of the body are, during that time, proportionably deprived of their due quantity. When you put a stimulus to another part of the body, you then occasion a pain in that place ; and consequently a greater flow of animal æther : the consequence is, a derivation from the part first affected, and a mitigation of the inflam-

inflammation ; the vessels contract less strongly, and the circulation is not so rapid, nor the heat so great ; and the pain is divided, and thereby diminished. As the soul receives disagreeable sensation, from two parts, it bends the nervous fluid equally to both. Thus, you see, the saying holds good, *divide et impera* ; whence we may cure one pain, by inflicting another. And an obstruction, inflammation, &c. may be removed, by applying a stimulus to any other part of the body. Therefore, we see the use of blisters, cataplasms, &c. in curing inflammations, &c. by causing a derivation. They are also of great use, when applied to the inflamed place, in increasing the oscillatory motion ; and thereby assisting the vessels to throw off the offending matter, and open the obstructions. As the involuntary motions of the body are constant, uniform, and regular ; so the soul is accustomed to them, is unconcerned, and entirely neglectful of them ; and leaves matter to act by its own stated laws. But the necessary consequence of a stimulus, whether the soul adverts to it, or not, is a greater flow of the animal æther to the
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part. For all fluids collect themselves, in greater quantities about the part, where their current is obstructed.

The general and wise intention, therefore, of all involuntary motions, is to remove every thing; that irritates and disturbs, or hurts the body. For a stimulus is an obstruction of the nervous æther; and the more it is collected into one place, the more its force is increased. Whence those violent motions of the heart, in the beginning of fevers, small-pox, &c.; when frequently the blood, from its being affected by a *myasma*, acts as a stronger stimulus than usual, upon the organs. The best things may, by excess, become hurtful: so this endeavour to free the body, or any of its parts, from what is noxious, is sometimes so strong and vehement; as to threaten the entire destruction of the animal fabric.

Quick and instantaneous, strong and violent motions, seem absolutely to have determined the nature of the animal æther, to be the most quick, active and volatile of all imaginable fluids. Because none else is capable

pable of so quick and strong actions ; in order to determine the instantaneous obedience of the muscles, to the orders of the will. And such strong, violent, and quick motions must necessarily make a great waste, and expence of this animal æther ; so as to require a constant supply, of such fine and subtile parts, from the blood and atmosphere.

That there may be, in nature, material systems of fluids, of several degrees of rarity and subtility, even indefinitely many, appears from the elasticity, attraction and other qualities of the Newtonian æther : which must necessarily arise from another more ætherial and subtile fluid. Or else we must admit *elasticity, attraction, &c.* in the particles of the Newtonian æther, without a cause : or suppose these qualities innate to them ; and to have been impressed on them, at their first creation, by the Almighty. For nature never acts, in general, by starts and jumps, or unequal steps. Whence we may infer, that, as in quantity, there is one or more means between the least and the greatest : so, in substances of all kinds, there

there may be intermediates, between the mere immaterial spirit, and gross matter; for the original atoms were of different sizes. And this intermediate material, and extremely subtile substance, makes the cement between the human soul and body; and is the instrument or medium of all its actions and functions. But of this infinitely fine and elastic fluid, I am afraid none will be able to determine the specific nature.

That we may however discover, as far as the case will admit, the nature and creation of this animal æther, we shall consider the nature and use of the several organs and vessels of the body, with their contained fluids. The stomach, we know, is the first vessel, that receives the food, from the mouth. The food is bulky matter, more or less compacted. This matter, being received into the stomach, follows its own nature; and, by the heat of that organ, soon ferments, and thereby stimulates the coats of the stomach into convulsive contractions; and these contractions, with the assistance of the attraction and collision

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of the particles of food, against each other, soon turn it into a homogenous fluid substance, called *chyle*, or matter, one degree refined, having its grosser parts separated; which, by their specific gravity, descend, by the pylorus, into the intestines, and come out, by the Anus, in form of excrements. The more subtile parts undergo another degree of refinement, by their own intestine motion, and the action of the guts; and are then absorbed, enter the mass, and undergo another degree of refinement; put on another appearance, and are distinguished by the name of *blood*: which, by trituration, has many of its angles rubbed off, and gets a still finer consistence, so as to enter the lymphatics; from thence it is absorbed by the nerves; where it gets the name of *animal æther*, *nervous fluid*, *animal spirits*, or the *medium* employed in sensation. So that the stomach is to the chyle, what the arteries are to the blood; and the arteries are to the blood, what the nerves are to the animal æther.

Now that we may have some idea of the subtilty of this æther, which arises from
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the food ; let us consider the magnitude of a red globule of blood, which, by experiments, is found to be in size $\frac{1}{1000}$ part of $\frac{1}{1000}$ part of an inch ; that is, 10,000 of them, put close together, would make a line of a geometrical inch in length. The first class of lymphatics, called *serous* lymphatics, is six times less than the last or smallest blood-vessels ; consequently a globule, that can enter a lymphatic of the first kind, is six times less than the smallest red globule, that is six times smaller than the ten thousandth part of an inch ; and a lymphatic of the second kind, is six times smaller than that of the first ; and so on, till you get to the last class of lymphatics ; which is thirty-six times smaller than that of the first ; and this series of digression proceeds, till you get to the arteries. And all the lymphatics, that have hitherto been discovered, are veins, or vessels, whose diameters grow broader, from a narrow beginning, which must have their corresponding arteries, and vessels, to secrete a fluid liquor, to lubricate their coats. The arteries observe the same series of digression ; the last class being thirty-six times smaller than

the first; and every class has its arteries, veins, and obforbents, to secrete a liquid, to keep the canals supple; the excrementitious part of which passes off by the sanctorian perspiration. Now, as there are many classes of nerves, differing from one another in subtilty; so one class may suffer, while the rest remain almost entire. One class may, by any cause, be rendered unfit for performing its office; while the other is only impeded in its operations; and, no doubt, this is the cause of the gradual decline of the senses.

Some individuals have not originally all the series of subdivisions of the nerves; others have lost them through time; some have not got time to bring them to perfection; while others may have them all, though imperfectly formed in all their series; as we see in slow capacities, old men, children, and fools.

Matter, therefore, from its being taken into the mouth, till it arrives at the nerves, and goes off by perspiration, is the same individual matter, having only suffered this change,

change, of having its parts more finely divided, which does not alter its essence. 'Tis matter in the mouth, and matter in the nerves, and both subject to the same laws. And were we to go, ad infinitum, in dividing matter, the finest subdivision will have all the properties, and be subject to all the laws, of the grossest matter; for no change of place, or division, as I have already proved, can work the smallest change in the essence.

This we may illustrate by a familiar and obvious example drawn from fire or heat, which is a degree of fire, and may be properly called fire invisible.

HEAT chiefly consists in the local motion of the small parts of a body, mechanically modified by certain conditions; of which the principal are, the vehement and various agitations of the small insensible parts, and that quaquaversum; for a progressive velocity of a body is not sufficient to create heat; as is evident from the motion of the air or water, which do not grow hotter by motion. For the production of heat, it is necessary
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that the parts be exceeding fine and subtile, and rapidly agitated, otherwise they cannot penetrate the pores of neighbouring bodies, so as to warm and burn them. The intenseness of heat is, *cæteris paribus*, as the density of the rays, or particles of matter which occasion it; and the density is as the square of the distance from the radiating point reciprocally.

Heat is not a fluid, *sui generis*, which freely pervades all bodies; but only the action of the particles of matter against each other. After you have obtained heat, increase only the attrition and collition, a little more, and you get fire, or visible heat; which is nothing else, but the particles of matter, by rubbing against each other, and thereby losing many of their angles, become finer, and more disengaged. So *smoak* is the *fumes* separated from any body, by the action of its particles upon each other; and *flame* is smoak heated red hot, and agitated violently enough to emit light. As attrition and collition produce fire, so does fermentation; which is nothing else, but an intestine motion of
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the particles of matter *inter se* ; as I have shewn in my *new system of physic*. Take away a little of the velocity of the parts of matter, which produced fire, and you have light ; which is only fire, whose particles are at too great a distance from each other, and too languid in their motion, to be so penetrating as to burn. Diminish the motion, and set the corpuscles at a still farther distance, and you produce æther, or invisible light ; differing only from the nervous æther, as a contained does from an extravasated fluid. The one is called animal æther, the other plainly æther, or air.

When I say, that æther is invisible, I mean, only with respect to man ; for it may be visible to some other creatures, as cats, owls, &c. for the corpuscles or atoms of light have a positive existence ; and do not lose their being, with the departure of the sun ; or when darkness comes on. For day-light is nothing but æther, put in motion by the sun's rays ; which is to the air, what the soul is to the nerves. Whether there is absolute darkness, where no creature can see, is more than I know. We, every day, see,
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what is darkness to one species of animals, is not so to another. And even, in the same species, we observe a difference; one individual differing considerably from another.

All objects, seen by the soul, have rays, passing through the pupilla, to the retina; where they give an impulse to the optic nerves; which impulse raises a motion, in the animal æther, concerned in vision; which illuminates the points of the brain, that go to the formation of the optic nerves, by means of the humours of the eye reflecting all the points of the object upon the retina. And accordingly the soul perceives the object, more or less distinctly, as the humours, more or less accurately, reflect the points of the object. Whence we see, that, tho' the eye be fitted out with all the geometrical exactness possible, yet, if the optic nerves are incapable of carrying the reflection from the retina, the soul will not perceive the object.

Again, if the humours of the eye are viscid and languid, then the refraction of
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the rays will be languid, and the soul's perception will be dull and imperfect. Films, motes and specks will seem to be in the eye; the corpuscles being languid, will, by their attraction, form into larger ones; which darken the atmosphere in certain points, and appear to the soul as real motes.

On the contrary, if the fibres are too much contracted, and the humours accelerated and divided; then the soul will be stunned, with the light, and inflammations will arise in the eyes.

When the optic nerves are perfect, and the humours of a proper density; the soul, by acting upon the animal æther, contained in the optic nerves, can recall the remembrance of an object, the idea of which, it has once received by their means, as distinctly, as if the object was present before it; by putting the nerves and æther into the same tensify and motion, which the object did, when first it gave the impulse.

The soul acts from a central point, of self-motion and self-activity, radiate in a limited sphere : and, where it finds proper organs, concurs and analogises, in these organs, with the established laws of bodies.

In order to understand this a little more perfectly, we shall consider the nature of the sun ; which is to the earth and atmosphere, what the soul is to the body.

The AIR exists in three conditions, *fire*, *light* and *spirit* : the light and spirit are the finer and grosser parts of the air in motion. From the earth to the sun, the air is finer and finer ; till it becomes pure light, near the confines of the sun, and fire in the orb of the sun or *solar focus*. From the earth, towards the circumference of this system, including the fixed stars ; the air becomes grosser and grosser, till it becomes torpid and stagnates ; in which condition it is at the utmost verge of this system. To this agree the scripture expressions, *utter darkness*, *blackness of darkness*, in the New Testament ; and *darkness* that may be felt, in the Old.

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The sun, which is in the center, is the active vivifying principle ; which, by its attrition and collision, reduce the grosser parts of the atmosphere into atoms, fine subtile parts, or æther ; which, issuing out in right lines, by means of their concussion against each other, and the constant influx of the gross fluid from behind, sets the atmosphere in motion, which pushes the earth forward ; which is prevented from being pushed out of its own orbit, by the gross matter behind. We are not to suppose that the rays of the sun reach our earth : their influence indeed reaches, but the rays proceed only a short way from the sun, which give a stimulus to the atmosphere. Thus this material system is perpetually changing conditions, and circulating.

This æther, or spirit, is the cement of all bodies, supports the creation, and is the cause of all the revolutions, changes and motions in the universe ; the voluntary actions of animals excepted. Withdraw only this, and matter would immediately fall into the original *chaos*, out of which it was

formed. Some think, this was the case, at the deluge.

Just so it is with the heart; it receives its first motion from the animal æther, whereby it discharges its contained blood; which continues to circulate, by means of the elasticity of the vessels, and the stimulus it gives to the nerves; till it returns again to the heart.

As the heart is to the blood, so the brain is to the nerves. The heart is the center of motion to the blood; and the brain is the center of motion to the nervous æther; and all received motion, at first, from the Almighty FIAT.

The soul is placed by the Almighty in the sensorium of the brain; as a center in a circle; the nerves are radii, proceeding from that center, whose axis must always be exactly parallel to that point. In this situation, they make their impulses fully, and in direct lines. But if the axis of the radii of any of the senses, is a little askew; then that sense, or senses, depend-
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ing upon that radius, or radii, are imperfect, or intirely lost.

Suppose the axis of the radius of the optic nerve, is not parallel to the sensorium, but a little askew ; then vision is delusive ; we believe objects to be different, from what they are really discovered to be, by those whose optic nerves proceed in direct lines from the center.

If, by a fall, or other cause, the nerves are struck askew ; then the person loses the use of his reason : and the same shock, that deprived one person of his reason, may recover the use of it to another, whose nerves were askew before ; and, by concussion, &c. have their axis parallel to the sensorium, and the radii come all in direct lines to the center.

So that the difference proceeds, not from the immaterial being ; but from the regular or irregular motions of matter ; upon which, the exercise of the faculties depends. So that, whenever God Almighty is pleased to divest the soul of that clog of flesh, the
body ;

body ; it will appear the same immaterial, impassible being, whether it formerly resided in the body of a fool or philosopher ; an old man or an infant ; a helpless, poor invalid ; or a healthy, rich, imperious potentate.

What this immaterial substance is, considered in itself, distinct from the body, we have but a faint and imperfect idea, therefore we must turn our eyes to its faculties ; the exercise of which, while imprisoned in matter (and what its power and manner of operation, when divested of matter, is not our present business to consider) depends upon the modulation and mechanism of matter.

The soul must have an object, and bodily organs, able to receive sensation from that object, when applied to them ; which impulse, or sensation, is carried to the soul, and puts it upon exercising that faculty called *perception* : and, by its intrinsic power, it retains or loses that perception ; exercises, revolves, or turns it over. The act of the soul, in retaining perceptions, is called *memory*. The memory itself, or retained perceptions,

ceptions, are the materials that make up or compose our *thoughts* ; and the exercise of the soul, in revolving and turning them over, is called *reflection*.

Now the soul, being furnished with materials, from objects from without, can within itself, compare them with one another ; and thereby discover the agreement or disagreement, the relation and connection, they bear to one another ; and this exercise of the soul, we call *reason, wisdom, judgment, or understanding* ; which is always in proportion to the materials, and the fibres of the organs in justly conveying them. If the soul loses, at any time, a perception ; it must act upon the bodily organs, till it brings them, to that degree of tension, they were in, when first they gave that perception. And if that does not recover it, then, there is an absolute necessity, to have the primary object applied to the organs, to raise the sensation, before the soul recovers the perception. So that, take away objects or render the organs, either not susceptible of impression, or incapable of conveying it to the soul, so as to excite perception in it ;
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you render the soul incapable of acting, even so much as to shew its own existence, by conscioufness.

Yet, though matter properly performs its part, in making impulses, that raise just, clear, distinct and full perceptions ; the soul has a faculty, given it by Almighty God, peculiar to itself alone, and incompatible with matter ; by which it is able, to counteract any or all the perceptions excited, by the impulse of matter ; whenever it pleases to exert that faculty, in a proper manner. This faculty we call *will*, which distinguishes the animal, from the vegetable creation. When the soul wills to influence the body, it displays its influence upon the animal æther, by contact or collision : it affects the nerves of the heart, which consequently alter its contractions ; the heart alters the motion of the blood, and contraction of the arteries ; which gives a different beating to the pulse.

If the soul wills to recover, meditate upon, or entertain itself with a pleasant perception, it accelerates the motion of the animal

mal æther, which makes the heart contract faster ; the arteries beat quicker ; the fluids move with greater velocity ; and the pulse is more rapid and full.

If the soul wills to perceive a disagreeable or frightful idea ; it gives a faint impulse to the animal æther ; which consequently moves slower ; the fibres of the arteries become lax ; the secretion of the æther is diminished ; the heart contracts slowly, and is hardly able to thrust out the blood ; the arteries too beat languidly ; the fluids move weakly, and, in some parts of the body, stagnate ; the solids are relaxed ; and the secretions interrupted. This shews us why a person turns pale, upon a fright : the heart flutters, because it is unable to contract with sufficient force, to disengage itself of the blood, and to throw it into the arteries ; which occasions the person sometimes to fall into a swoon.

The exercise and operation of the faculties of the soul, depend upon each other, and are tied together, as the links of a chain.

The *understanding, reason, wisdom, knowledge or judgment*, is the supreme faculty of the soul. That faculty depends upon another, called *memory or retention* ; which arises from a third, called *reflection or thought* ; and thoughts arises from *perception* ; and perception comes by *sensation*, conveyed to the soul. And the sensations are excited, by the application or impression of objects upon the organs of sense, or at least to the medium of subtile æther, that surrounds them. That is, material objects can act, no other way, upon the animal organs, but either immediately, by communicating motion to these organs, and thereby putting their constituent parts, into action and reaction, upon each other ; or mediately, by the intervention of some subtile fluid or matter, upon which they impress their actions and motions ; which is transmitted, in the same manner, by the medium, to the organs. Small bodies act upon one another in the same manner, and by the same laws and mechanism, as great bodies do.

He, who would understand the effects of little bodies, and the action of their particles
upon

upon each other, has nothing to do, but resemble small bodies to great ones, under particular laws and conditions. For example; 'as attraction is the same in small bodies as in large; we see that bodies of plain and smooth surfaces, in which many points come into contact, cohere most strongly; which necessarily follows from the principle of attraction. For attraction is nothing else but a certain determinate connection and figure of atoms, which fit them to be more or less acted upon by the pressure of the atmosphere.

The organs or instruments made use of, by the soul, and designed by God Almighty to convey sensation to it, are the five senses, viz. *hearing, seeing, tasting, smelling, and feeling*; other inlets the soul hath not. It sees through the eyes, and through them alone; hears through the ears, and only by their means, &c. The soul cannot from any will or power of its own, make one sense perform another's office. If you shut the eyes and put any object to the ear, the soul does not, from the application, perceive its figure, dimension or colour; but when you open the eyes, and apply it there, the soul

immediately perceives the figure, dimension and colour of the object ; if there is not a defect in the optic nerve.

The soul, as I observed before, has, by means of its supreme faculty the *will*, a power in a regular *system* of *organs*, of intending or remitting the circulation of the blood, by contracting or relaxing the fibres or solids, upon which the circulation greatly depends : consequently can impede or accelerate the motion of the nerves, and thereby neglect, attend to, lose or improve the ideas, conveyed by them. The attention to particular ideas, like motion to the body, restores the nerves or preserves them, to a particular tensity ; whereby the soul has more time to judge of objects, with greater exactness. And this capacity of judging, is acquired, by study and application.

Seeing, therefore, the soul has a power to contemplate any of its ideas ; it will naturally entertain and often reflect upon those, that give it most pleasure ; which surely, in the pure state of man in Paradise, were the most elevated and refined ; and nothing being so
sublime

sublime as the adoration of God, and contemplation of his works of creation; the chief employment of the Paradise inhabitants, therefore, was to worship God, and view the operations of his hands. For man's body, before the fall, allowed the faculties of the soul to discover the most secret and hidden properties of material objects, and the relation they bore to one another, and the rest of the universe. But the fall of man wrought the woeful change which we now feel. Thus the God of nature hath formed us, and ordained that the material should obey the direction of the immaterial part, and vice versa. Thus the soul moves or affects matter, and matter the soul; and this mechanical system of matter and spirit constitute that organized machine called body; which is preserved in life and health from the harmony of its several parts; for it is well known that a disordered body will occasion a disordered mind, et vice versa.

S E C T. II.

C H A P. I.

OF MAN, CONSIDERED AS ENJOYING
THREE KINDS OF LIFE, VIZ.
A VEGITABLE, ANIMAL, AND SPIRITUAL.

THE VEGITATION OF PLANTS,
MINERALS AND ANIMALS.

THUS I have shewn that man is made up of two parts, matter and spirit, or body and soul, and that the different affections of matter and motion, differently modulate the action of the soul, which is limited and dependent upon the regular influence of organized matter; as also that the soul is capable of producing diverse thoughts and motions in a system of matter, whose corpuscles are properly arraigned and modulated, to be directed and influenced by its impulse. The soul accompanies the body, through all its different changes, and its relation, to time, place and other circumstances,

ces, depends intirely upon its being inclosed in matter. However, you are not to suppose that I mean to deprive the body of a power of acting without the immediate assistance of the soul ; no, the body can digest the food, and turn it into chyle and nourishment, without the assistance of reason, thought or reflection ; as long as the body preserves its just balance, equilibrium, or standard of health : but if that is impaired, body and soul suffer with it. For man is endowed with three lives, viz. *a vegetable, animal and spiritual* : and in this three-fold state we will now consider him.

Man lives as a vegetable ; and, by the laws of vegetation, all his involuntary motions are performed. Let us then consider vegetation.

By many and repeated experiments, it appears, that, tubes, immersed in liquors, have a power of attracting fluids, to a certain height ; in the inverse ratio of their diameters : one may be satisfied of this by cutting the branch of a tree, and immersing it in water ; he will find the water to ascend a considerable height.

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It is, by the attractive power, with which the small vessels of vegetables are endowed, that, like so many filters, they draw out of the earth, juices differing according to the different natures of the vegetables, and in proportion to their bulk. And the plant is more or less nourished and augmented, in proportion, as the water, in which it stands, contains a greater or smaller quantity of proper terrestrial matter in it.

Every kind of vegetable requires a particular and specific matter, for its formation and nourishment; yea, every part of the same plant doeth so. For very many and different ingredients go to the composition of one individual plant. If therefore the soil, in which any vegetable or seed is planted, contains all or most of the proper ingredients, and those in a due quantity; it will grow and thrive. But, if there be not so many corpuscles, as are necessary for the constitution of the main and essential parts of the plant; it will not prosper at all. Or if the corpuscles be not in sufficient plenty, then the plant will be staved, and never arrive at its natural stature. And if there be
any

any of the less necessary corpuscles wanting, there will be some failure in the plant: it will be deficient in taste, smell, colour or virtues. And though a tract of land may happen not to contain matter, proper for the construction of one particular kind of plant, yet it may of another. For, it is impossible to imagine, that one uniform homogenous matter, having its principles or organical parts all of the same substance, constitution, magnitude, figure and gravity, should ever constitute bodies, so egregiously unlike in all these respects, as vegetables of different kinds; nay, as the different parts of the same vegetable are: that one should carry a milky, another a yellow, a third a red juice, in its veins; one afford a fragrant, another an offensive smell; one a sweet, another a bitter acrid taste; one nourishing, another poisonous; one purging, another astringent; one rough, another smooth: and all arise from the very same matter, is past belief. As, therefore, every sort of grain takes forth the particular matter, that is proper for its own nourishment; Therefore we see the great use of adapting the grain

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to the soil ; and the advantage of frequently changing the seed.

The apothecary also may see, how careful he ought to be, in knowing the proper season of the year, and the time of the day for gathering plants ; as also the soil in which they grow, in greatest perfection. Neither is it a matter of indifference, whether we use the flower or the seed ; the stalk or the root ; for they are all materially different, in every individual plant.

From all this we conclude, that water is so far from being the matter that composes vegetable bodies ; that it serves for little more than a vehicle to the terrestrial matter, which forms vegetables. Whence we see the cause of the different secretions in the human body.

But water has no power to move itself ; nor rise to the vast height it doth, in the tall plants : so far from it, that it doth not appear, that even its fluidity consists in the intestine motion of its parts ; for there is no
need

need of any thing more to constitute the phænomenon of fluidity, than such a figure and disposition of parts as water has : corpuscles of that make that are absolutely spherical, must stand so slippery upon each other, as to be susceptible of every touch : and tho' not perpetually in motion, yet must be very ready and capable to be put in motion by the slightest force imaginable. But by the attraction of the absorbents, and by their vibrating motions, the sap continues to ascend in the vessels of trees ; even in the cold season of winter, though slowly and in small quantity : and trees, in cold, cloudy weather, provided it be dry, take up continually by the roots, as much moisture, as is necessary to supply the waste by perspiration, and keep the vessels of the trunk and large branches full. But though this capillary attraction and oscillatory vibration make the sap rise in plants ; they will not, without the assistance of some other cause, make a continued derivation of it from their roots, to the branches and leaves : because, as soon as the capillary tubes are filled, or have raised fluids, to a certain height, all motion from attraction ceases ; but as the action of the

air and sun-beams, upon the trunks, branches and leaves, occasion a strong perspiration of the sap, by their pores ; a proportional quantity will be attracted from the earth, by their roots, to supply this waste, and keep the cappillary vessels always full.

However, as often as the absence of the sun, and the cool moist state of the air, put a stop to the perspiration of vegetables, the sap ceases to ascend, which occasions the fall of the leaves of trees ; nay some affirm that, if the earth be warm and dry, it takes a retrograde motion : and hence they say that in a cool summer's evening, when the dew begins to fall, vegetables attract the watery particles in the air, by the pores of their leaves and branches ; in like manner, as they had done the moisture by their roots in the day time : and the vessels that perspire in the heat of the day, assume a contrary office in the night season ; and imbibe the dew and watery particles then floating in the air. This doctrine, I believe, will be found erroneous : for the vessels, that receive the sap from the roots, have valves, that open upwards, and shut downwards ; so that the
dew

dew cannot descend into them ; but they have their veins, which receive the sap from them, and carry it downwards to their roots : for the roots are to vegetables, what the heart and *primæ viæ* are to the body, of an animal.

The branches and trunks of vegetables, have both their inhaling and exhaling vessels : by the first they receive the dew and moisture of the air, together with a part of the æther ; which is absolutely necessary : as is evident from an experiment of Mr. Ray's, who sowed lettuce seed on some earth, in the open air ; and some of the same seed on earth in an exhausted air pump : the seeds, sown in the open air, grew an inch and a half in eight days ; but that, in the exhausted receiver, grew not at all ; but when the air was let in, the seeds grew two or three inches in the space of a week. Hence we may conclude the necessity of the air, for the birth, life and continuance of motion of vegetables.

The trunk of a tree or plant is no other than a canal, made up of lesser pipes, through which the juices circulate ; and by the action

tion of the atmosphere, and the heat, and attraction of the sun, they are forced from a larger to a narrower space. Air so much promotes vegetation, that some roots and plants will increase, if hung in the open air, without the help of earth ; and many vegetables live long, and even grow to a vast size, in water, without robbing the earth of much of its treasures. Besides what the air adds to the real substance of the plant, it shakes and agitates it ; and by that means acts as a stimulus, makes the juices ascend, and prevents the secretory vessels from being obstructed.

By the exhaling vessels, they perspire a great deal : indeed the much greater part of the fluid mass, conveyed into plants, by absorption, doth not settle and abide there ; but passes through the pores, is thrown out in perspiration, and exhaled up into the atmosphere. Perhaps not above the hundred part goes to the addition of the plant ; and the detachment, of watery particles, in so great plenty, from the parts of plants, affords a manifest reason, why those countries, which abound with trees, and large vegetables, are
very

very obnoxious to damps, great humidity in the air, and more frequent rains, than other countries that are more open and free. What is too gross and weighty, to be supported by the atmosphere, is deposited on the surface of the flowers, leaves and other parts of the plants; and constitute *manna*, *honey* and other gummy exudations, which may be called the excrementitious matter of vegetables: the finer part goes off with the watery, and is, by the air, conveyed to our organs of smelling; and are either pleasant or offensive; beneficial or hurtful; according to their quality and quantity.

But, though I mention the vegetation of plants, as coming nearest to that of man; yet I would not be understood to exclude the vegetation of minerals, stones, &c.

That some of the hardest stones and marbles, at this day, found in the bowels of the earth, were once soft, like mud; and capable of receiving heterogeneous bodies into their compositions, is, I think, plain to a demonstration; from the frequent mixture of various shells, fish bones, bits of plants, and animals,

plants

plants compleatly formed, entire animals (sometimes alive) found in the hardest parts of their substances

The veins of metals, forming themselves between the rocks and different strata of earths, like branches of trees, incline one to believe, that they really grow like plants; and receive increase from exsudations, and the minute and loose parts of mineral matter, gradually adhering to their outward substances.

It is true the progress of nature, in this sort, of vegetation is so slow, that five or six hundred years, and perhaps as many thousands will give no great proof or certain indication of the increase of minerals; but if they grow and vegetate, there is no necessity that the time of their growth should be limited, to such periods, as we are wont to assign to other vegetables: we may go back, as many thousand years beyond the Mosaic creation, as the necessities of nature may be thought to require: for the beginning of time, of days and years respect only the inhabitants of this world. When Moses says, that God
made

made this world in six days, why may we not be allowed to suppose it 6000 years, if the observed progress of nature requires it? For the Scripture tells us that a 1000 years, with the Lord, are as one day.

If the creation of the world was a work of six thousand years, and God rested the seventh; then perhaps it will be of six thousand years duration, and then Christ will rest one thousand years with his saints, before their consummation in bliss.

Iron, lead, copper, silver, rocks, &c. grow, no more, in a thousand years, than an oak doth in one year; and this may be still called growing. Though their substances be bulky, and their veins far extended, yet, since we are not bounded by years nor time, in our imaginations, we have still room left in our minds to proportion the one to the other; because whatever alterations, the outward surface of the earth may have suffered, and undergone, we have no great reason to think that the inward parts have been much changed.

Having now considered the vegetation of plants, &c. we come now to consider the vegetable life of man.

The muscular fibres of animals, are so framed, as to contract, whenever a cause, proper to excite their action, is applied to them ; or, in defect of this, always to remain at rest. This cause is either an effect of the will, or a stimulus of some kind or other ; to the former is owing the voluntary motion, peculiar to animals ; to the latter, the vital, spontaneous, or involuntary ; which all vegetables possess ; and is performed in infants, ideots, and brutes, of the lowest order, in as perfect a manner, as in the wisest philosopher.

In DEGLUTITION, the contraction of the muscles, which pull up the *larynx* and *os hyoides*, and so push the meat into the dilated *pharynx*, is generally spontaneous ; it is owing to the irritation of the *fauces*, by the food passing this way. No sooner is the aliment received into the *pharynx*, than it contracts ; and, embracing it closely, pushes it on to the *œsophagus* ; which, having its nerves irritated, and its fibres stretched by the food, in its descent, makes each ringlet of this tube contract itself, and so transmit the food to the next, till at last it

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is pushed into the stomach; which, being irritated by the stimulus and dilatation of the fermenting aliment, contracts itself; by which means, it discharges, by the *pylorus*, into the guts, part of its contents; then its fibres are somewhat relaxed; till the remaining part of the aliment, by its continuing in a fermenting state, swells, and thereby dilates and irritates the coats of the stomach, into fresh contractions; so that the aliment is thrown into the guts, by the alternate contractions of the stomach, excited thereto by a stimulus; just in the same manner as the heart throws the blood into the arteries. The diastole of the stomach answers to the systole of the guts. Granivorous birds, whose stomach, are less sensible of a stimulus, swallow small stones, to break and grind their food, and to excite their stomachs into contraction.

When any thing is received into the stomach. which strongly irritates, or disagreeably affects its nerves; it is thrown into convulsive contractions; which are renewed, after short intervals, till the offending

matter is either quite expelled, or greatly weakened.

On the other hand, *opium*, which renders our fibres and nerves insensible of any irritation, has, of all other things, the greatest power to quiet convulsive and irregular motions of the nerves.

The PERISTALTIC MOTION of the guts, is owing to the chyle, bile, and rarified air, acting upon them, as a stimulus ; the valves detain the aliment, till they occasion a sufficient tumescence, whereby the part is stimulated into contractions ; and the aliment is thereby discharged into the next portion ; so that every portion of the guts, between the valves, acts as a little stomach or an heart.

Purgatives act chiefly, by vellicating the inside of the guts, whereby they greatly increase this motion ; and such things, as render our nerves less sensible of any irritation, lessen or destroy the peristaltic motion of the guts. The stimulus of the bile, is very necessary to the right performance

ance of the motion ; without it, the guts would not be able to overcome the resistance of the distending force of the rarified air, and fermenting, or rather putrifying chyle ; their coats would be relaxed, their tone impaired ; and their cavities inflated : hence costiveness, and myasma arising from the excrements, remaining longer in the intestines, than, by the laws of nature, they ought : this we see in an inveterate jaundice, where the bile is obstructed.

While the chyle is taken up, as it passes along, by the absorbent veins of the small guts ; the grosser and less nutritious parts of our aliments are transmitted from the *ileum*, by the valve of the *colon*, into the great guts ; where they remain for some time, without giving any disturbance ; till, by the pressure of the diaphragm, and abdominal muscles, in respiration, together with the gentle contractions of the guts themselves, they are pushed into the *rectum* ; where, partly by their acrimony, but chiefly by their weight and bulk, overstretching the fibres, they excite this gut
tion

into strong contractions, and bring on an insuperable desire of emptying it. The more acrid the matter is, the more strongly it solicits the fibres of the *rectum* to contraction and ejection ; if any acrid matter is lodged in the *plicæ* of the *rectum*, it irritates its nervous *papillæ* as in a *tenasmus* ; and its muscular coat is excited into frequent, and strong contractions ; and there is almost a perpetual desire to go to stool. This is best cured, by oily and mucilaginous glysters, with opium.

As I have already, in my *new system of physic*, taken notice of the manner of the blood's circulation through the body, from the heart, and shewn it to be an involuntary, vegetable motion, arising from the established laws of matter ; I shall now consider the nature of respiration.

RESPIRATION is owing both to the blood's acting as a stimulus on the vessels of the lungs ; and also to the operation of the air in inspiration.

Thus we observe, that as the blood flows in greater or less quantity, through the
lungs,

lungs, inspiration and expiration more frequently succeed each other ; whence the quick breathing, observed in acute fevers, or upon violent exercise. Though the quantity of blood, flowing through the lungs, remains the same ; yet if its heat, and consequently its bulk be increased, respiration becomes more frequent.

When any obstruction happens in the pulmonary vessels, which renders the passage of the blood through them more difficult, than in health ; respiration is more laborious, and more frequently repeated : whence the quick breathing in peripneumonies, and other disorders of obstructed lungs.

If a portion of the lungs is rendered useless, or wholly consumed by an ulcer ; then the person is short-breathed, and subject to asthmatic fits, upon the least fatigue, or upon any increase of the motion, or rarefaction of the blood.

Therefore it appears, that the motion of respiration, is always proportional to the
quantity

quantity of blood, thrown into the pulmonary vessels, and its easy transit through them. Hence we see, why blood-letting gives more speedy relief, in fits of difficult breathing, than any other remedy.

Respiration differs from other involuntary motions, in this, that the soul has a more immediate power over it. The soul has, indeed, a power over all the motions of the body ; the voluntary motions are the result of its action ; and the involuntary may be accelerated or retarded thereby. The soul, however, is not a party concerned, in the involuntary motions of the body, unless called upon, by some preternatural stimulus.

Digestion, circulation, and respiration, we see, are the result of a stimulus upon the nerves ; and is properly called vegetable, or rather material life. And all vegetables, properly so called, fossils, minerals, &c. have a circulation of this kind ; and, as such, the *animalcule* lives in *semine*. These were at first the productions of nature ; and God Almighty still leaves them

them to be governed by the laws of matter.

In one sense, God is the Creator of all things, but nothing immediately are the works of his creation, but the heaven and the earth ; that is, the chaos, out of which they sprung ; and all spiritual substances. Indeed, both the soul and body of man, were of the Almighty's immediate creation : all other things, (fowls, fishes, and all other things that breathe the breath of life, excepted) plants, minerals, fossils, &c. are the production of matter, and entirely live by mechanism : but, of these, God Almighty, in a secondary sense, is the Creator.

This doctrine may be easily proved, from the history of the creation, by Moses ; the immaterial part of all animals, from what has been said, come immediately from the hands of the Almighty, and is infused into the body at birth ; till then, the creature lives as any other vegetable.

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As such, the animalcule lives in *femene patris*; its circulation is kept up, by means of its stimulating fluid, and the heat of the body of the male, which gives it an additional stimulus. In coition, when it is lodged in *utero*, the heat of that vessel, and the surrounding waters, act as an assisting stimulus, to keep up the circulation. When it is removed from these, at birth, it receives part of the surrounding air, which sets its lungs to play; and it has, at the same time, that *immaterial something* infused into it; which acts upon the nerves, and again sets all in motion; which continue to move by a stimulus, without the will or knowledge of the immaterial part, till death. This I call a material life, common to all the universe. Living creatures partake of this life, in common with all other parts of the creation.

Before I leave this part, I shall make one remark.

The *fætus* lives in *utero matris*, without respiration, because, the greatest part of the blood, by means of the *foramen ovale et ductus arteriosus*, is conveyed from
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the right *sinus venosus* and *ventricle* of the heart, into the left *ventricle* and *aorta*, without passing thro' the lungs; and its fluids, being derived from the mother's blood, which have sustained the action of the air, in her lungs, must be equally fit for its nourishment and support, as for hers.

The *fœtus*, after separation from the mother, being involved in its *secundines*, lives for a considerable time, without breathing; because the circulation of the blood continues to be carried on, in the same manner as when it was in the womb; only a small portion of it passes through the lungs. So there is nothing to hinder the animal from continuing to live, till its life is extinguished by cold, or want of nourishment. Therefore, children may be alive some time after birth, without discovering signs of life; and we ought not, too hastily, to pronounce them dead, as I am afraid is too often the case.

Many children, I verily believe, are declared to be *still-born*, that were alive and might have remained so, if proper means had been used, for continuing life. When

the child is much stuffed up with phlegm, and is of a cold and heavy temperament; then the respiration begins slowly, and with difficulty: therefore proper stimulants ought to be applied, as blowing into the mouth, friction, heat, moistening the nose and breast, with spirit of wine or brandy, whipping the child till it cries, &c.

AGAIN, the urinary bladder is a hollow solitary muscle, containing the urine; which gradually oozes into its cavity, from the ureters, and prevents its natural tendency to contract itself, into its smallest capacity; where the urine is in such a quantity, as to over stretch the coats of the bladder; then it excites them into strong contractions, which, with the assistance of the *diaphragm*, *abdominal muscles*, and *levator ani*, open the sphincter, and expel the urine. The contraction of the bladder in a healthy person is more owing to its muscles being over stretched, than to any acrimony in the urine; but if the mucus, which defends the nerves, from the acrimony of the urine, is abraded and carried away; or if the inner coat of the bladder is inflamed; then

then the urine no sooner oozes through the ureters, and reaches the cavity of the bladder, than it brings the bladder, diaphragm, and abdominal muscles, into convulsive contractions : whence a painful and constant inclination to make water, though it comes away *guttatim*.

At the age of *puberty*, the semen begins to be duly prepared : the feminal vessels are dilated, and the semen stimulates the nerves of the *testes and vesiculæ seminales* ; but when, applied to the nerves, of any other part of the body, does not titulate them : for the nerves of different organs, in the same animal, are so constituted, as to be very differently affected, even by the same things. The stimulus of seed cause a more than ordinary flow of the nervous fluid to the *penis* ; which gently irritates it into more frequent vibratory contractions ; whereby the circulation is accelerated ; the heat increased ; and the *penis*, at length, is thrown into convulsions ; which produce an erection ; and if this is strong, or long continued ; it extends its influence over all the body : the pulse rises, nay flutters, as in an extacy ;
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a glowing heat diffuses itself over all the body; the eyes sparkle; and the violent titulation of the semen, gives a stimulus to the spermatic vessels; which, with the strong circulation in the *penis*, impose upon the person, strong solicitations for copulation: when the cause ceases, the inclination subsides.

The erection of the *penis*, frequently arises from the bladders being full of urine; and a discharge of very acrid, bilious matter by the anus, will do the same. In coition, the semen is forced down, by the contraction, and convulsive motions of the *vesiculæ seminales*; arising from the stimulating seed, into the bulbous part of the *urethra*: then the *musculi acceleratores urinæ* are thrown into convulsive motions, till all the seed is expelled; and by the titulation of the *rugæ* of the *vagina*, in time of coition, not only the uterus is affected, but the *fallopian tubes* turn their mouths to the *ovaria*; till the ovum has passed through the coats of the ovarium, into its cavity, through which it is pressed onward to the *uterus*, by the contraction of the muscular coat of the
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tube, excited by the stimulus of the ovum : so that every small ringlet of it, by its contraction, transmits the ovum to the succeeding one ; till it drops into the womb : in the same manner as the food is conveyed from the mouth through the æsophagus, into the stomach.

Infants and children are incapable of lust ; because the seminal vessels are not unfolded. But as soon as they arrive at the age, when they begin to unfold, the juices drill down the spermatic arteries, and being secreted, by the testes, produce a new sensation, unknown to the soul before ; which raises the perception in it we call lust : nor is it possible to extinguish that perception, while the cause continues.

But if, through age, the spermatic fluid is dried up, then there is no stimulus to raise the perception ; and consequently no lust. In bilious habits, where that fluid is plentifully secreted, if there is an object, that naturally raises that stimulus, and if the soul co-operates, in assisting the secretion.

Lust

Lust then has wonderful effects. The blood boils ; the pulse flutters ; the fluids, by their rapid motion and attrition, raise a temporary fever ; the imagination is ravished with transport. But if the soul sets itself to counter-act the other two ; by persevering in the conflict, it, with difficulty, gets the victory ; or, at least, the rational management. If they get a head ; they will be able to overbear the noblest faculties of the soul : and if too much followed, will relax the animal æther, and set its particles, at such a distance, from one another, as never after to be able to return to the former standard ; and from a hot, bilious and lively constitution, the person will become cold, frigid and dull. For passions are nothing else but a conflict, between the fibres of the nerves, the animal æther, and the operation of the soul.

C H A P. II.

OF THE ANIMAL LIFE OF MAN,

FROM what hath been said we see that the involuntary motions of animal arise from mere mechanism ; common to them, with the other parts of the creation ; and constitute the vegetable or material life of animals.

But man, in common with all other creatures, has an immaterial principle, the SOUL ; by means of which he enjoys an animal life ; which consists of voluntary motion ; and as our involuntary motion depends upon a stimulus, applied to the nerves by a material agent ; so our voluntary motion depends upon a stimulus given to the nerves, from an immaterial agent the *soul*. So that the nerves are the instruments made use of, for both motions.

Peoples talking, walking &c. in their sleep, is no argument against their actions being voluntary, and arising purely from the operation

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ration of the soul upon the nerves. The reason of the soul's performing these actions, when asleep, is, because the organs, that first conveyed these sensations to the soul, remain in the same tension, as when first they received the stimulus ; and are kept in that posture, by the soul's resting and lodging upon the idea ; because it gives it so much pleasure or pain, that it cannot think of parting with it, though the rest of the senses are so relaxed, as to be unfit to be acted upon : therefore, the person neither sees, hears, tastes, nor feels ; though he talks and walks. The muscles only appropriated to talking and walking, are kept by the will of the soul, in the same condition, as when they first received the impression ; so it is with the other senses, as hearing, seeing, &c. Hence we see, that one sense may be fit for receiving the operation of the soul, while the others are not. This enables us to account for a person's not seeing an object, placed before his eyes ; not hearing a person speak, when he is intensely looking upon a thing.

The soul, as king of the body, may alter and interrupt the involuntary motions.

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The remembrance of lascivious objects will cause a more than ordinary flow of the nervous fluid to the *penis*. The remembrance or idea of things formerly applied to the body, produces almost the same effect, as if really present.

Thus the sight, or remembrance of grateful food, causes an uncommon flow of spit-
tle into the mouth of an hungry person. The sight of a medicine, that often provoked vomiting, nay the very mention of its name, in some delicate constitutions, will raise a nausea ; and they are affected much in the same manner, when they behold any one, under the violent operation of an emetic. Fear causes a discharge, by urine or stool. Looking much at one that squints, affects the spectator, with the same disease. Certain disagreeable sounds will make the mouth to water. A sudden fear will occasion a palpitation of the heart. Yawning will go thro' a whole company. *Leslie* says, that many persons, from seeing the Quakers and other enthusiasts agitated and convulsed in their epileptic fits, have fallen into the same fits. Certain ideas and thoughts occasion a flow

of tears, from the lachrymal vessels. Agreeable ideas increase, and disagreeable ideas retard the circulation of the blood. Whence we see the danger, of bringing disagreeable news, to a sick person, and sometimes even very agreeable news proves hurtful ; also how much a sick person should endeavour to keep out of his mind disagreeable, painful, and afflicting thoughts : therefore a little agreeable company is medicine to a sick person.

Though the soul has a power over the involuntary motions of the body, in healthy state ; yet when the body is diseased or imperfectly formed, the operation of the soul then is irregular.

The organs of the body may be entirely unfit, to be acted upon, by the soul ; then it remains wrapped up in itself, like a criminal in a dungeon. Some people are born with imperfect nerves, which are stopt up ; and never, all their lives, unfold themselves, and shake of the clog of matter, which obstructs them. Accordingly they continue ideots all their days ; though their souls all the while,
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are equal to Sir Isaac Newton's ; and are only deprived of proper organs to exercise their faculties upon : and if by art or accident, the obstructed avenues, to their souls, are opened ; they immediately display their faculties ; and the persons just before ideots, now become rational men. Whence we are able to account for the vast variety we find in mens natural capacities and endowments ; which arises from this natural difference of the structure, mechanism and modulation of the organs of sensation. For thought and reflection, which is nothing else but thought, returning upon itself, bears the same relation to the soul, as motion does to matter. The soul may exist, with a capacity of thinking, though it don't exercise that capacity ; as that depends upon certain given circumstances. For the soul, no more, ceases to exist, when it does not think, than matter ceases to be matter, when it is not in motion. Again the body could often walk, when the soul is unable to direct walking ; through an indisposition of an animal æther. For it is in vain, that the soul wills motion, when the nerves are palsical, relaxed, unfit and unable to execute the will of the soul. In vain does
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the palsical man will to walk; the blind to see; the deaf to hear; till the impediments in the bodily organs, are removed. When they, by proper applications, are removed; then the body walks, at the soul's desire; the eyes see; the ears hear. Do the medicines work the change in the soul? Most certainly not.

Matter cannot divest the soul of its faculties, though it can render it impossible for it to exert them, upon the body; which may be so disordered, as not to be able to be directed by it. The soul's faculties then are not annihilated, but suspended from action: or to speak more properly, are wrapped up in itself. A being may undoubtedly exist, without giving appearance of its existence. The soul, therefore, may exist, without giving signs of its existence, or affecting matter so as to be conscious of its own existence: as in sleep without dreaming, it remains the same invariable essence; though the indisposition of the bodily organs renders it impossible to display those faculties, from whence thought and reflection come.

The soul is impassible, consequently incapable of change : all the changes that happen to an individual, arise from the different affections of the bodily organs. The soul of a new born child is the same, as that of an old man ; and that of a fool, as that of a philosopher.

The bodily organs, on which the operations of the soul depend, greatly vary ; by which, the exercise of its faculties are proportionably lessened or improved : but its particular existence, faculties and powers remain the same ; impassible to the laws of matter and motion. The difference between the lowest and most abject, and the highest and most elevated natural capacity, depends upon the instruments by which the soul acts and is affected ; which seem to us to alter its operations. The cause is in the material organs, which make representations of its operation ; according to their just or imperfect mechanism. If the bodily organs happen to be perfectly organized and exactly modulated to receive and convey, to the sensorium or seat of the soul, the ideas of objects, with a proper impulse ; then it exerts
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its faculties in a reasonable manner: the senses receive a just or sufficient degree of impulse, from the objects; which impulse the organs convey, in a just and sufficient degree, which excites, in the soul, the distinct idea of the object.

C H A P. III.

OF THE CAUSES THAT IMPEDE THE
SOUL IN THE EXERCISE OF ITS
FACULTIES.

WE will now consider the accidental causes, that impede the soul in the exercise of its faculties. The brightest wits, the most exalted understandings may be reduced to a level with the most abject, stupid and unintelligent fool ; by the mechanical affections of matter and motion. These changes, being possible in nature, are often found to happen under divers diseases ; when the figure, motion, or texture of the organs are disconcerted.

We often see a man of the brightest parts, and most enlarged understanding, who hath penetrated into the secret recesses of nature, despoiled of all his wisdom, and noble endowments, by the tyranny of a violent fever ; a fit of lunacy, &c. &c. Thus we behold him now divested of the exercise of his faculties : can we suppose this change made

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in the soul itself? no certainly it remains the same, and differs not, from what it was before; recover him from the fever, lunacy, &c. and remove the impediment it hath thrown upon the organs of the senses, and the exercise of all the faculties of the soul returns; his parts brighten; his understanding revives; and in short, he becomes in every respect, the same amiable person as he was, before the fever, lunacy, &c. seized him. I verily believe if two men had two bodies, exactly of the same model, and conversed with the same objects, their ideas, inclinations, capacities, and actions would be the same. This will appear more evident, when I come to treat of those diseases, that prevent the regular motion of the solids and fluids; especially those that are more particularly concerned in performing sensation; and of those applications, that recover them to their regular standard, in consequence of which these strange and unnatural fancies and flights vanish; for by removing the cause you remove the effect.

There are three ways by which the soul may be impeded in the exercise of its faculties,

ties, viz. either by the want of objects, of organs, or of a due tensility in the fibres to carry the impulse, with justice to the sensorium. The *first* is the case of Indians, &c. who have not objects to enlarge their knowledge: the *second* is the case of those, who have lost the use of the organs of one, or of all the senses; a person, that hath lost the use of the optic nerves, is blind; of the auditory nerves, is deaf, &c: the *third* is the case of old men and children, &c.

To understand these three impediments, we must consider the body in a healthy state, and then we shall see that every deviation from that standard, incurs a proportionable change, in the exercise of the faculties of the soul.

Now, in a healthy state, the solids are endowed with such an elasticity, as gives the blood a motion, fit to divide it into a just degree of fluidity, and an exact mixture to keep up the secretions: then the heart contracts regularly; the arteries beat proportionably; the animal fluids are easily moveable, and their motion regular and uniform;

and the nerves are tight, firm and elastic; and the organs of the senses are entire and properly dilated and unfolded. Then the body is in its center of perfection, and the point of ballance inclines to neither side; and the soul expands its faculties to the highest elevation it can reach, while confined in matter: then the soul feels no pain, no sadness, nor irregular starts of thought. For it is impossible, from the necessary connection, consent and agreement of soul and body, that there can be pain without the soul's perception; because that every perception is what constitutes pain: and it is also impossible that a person can fall into sadness from gaiety, without a change in the body, which appears heavier (not specifically but relatively) to the soul; the fluids move slower, which increases their attractive power to a degree inconsistent with a free circulation, then there appears to the soul an additional weight laid upon the body. The thoughts can never start from their natural standard, or regular way of thinking, without inferring a change in the motion of the animal fluids, fibres and solids; whether the object, causing the irregular turn of thought proceeds

ceeds from the soul's reflecting upon a disagreeable idea ; or from a disagreeable object externally applied to the organs of sense.

In hot, bilious constitutions, the solids are most elastic, and consequently make the strongest impression on the contained fluids, which move swiftly ; and by their heat and friction, are much rarified, attenuated and subtilized ; whereby they lose their finer parts. Whence a dryness in the habit and great plenty of salts ; both which are, in proportion, as the solids and fluids exceed the standard of health. Then the impulses from objects are quicker and more imperfect ; the thoughts are quick and volatile ; the soul exerts its faculties with vivacity, though not steady ; has incoherent starts ; cannot dwell long upon the contemplation of sensible ideas ; as the impulses upon the sensorium are strong and return fast. The body is subject to the stone, gout, madness, &c. In a bilious constitution, the animal æther is plentifully secreted ; which fortifies the soul, gives courage, and a sprightly liveliness, and witty turns : diminish the secretion by bleeding, purging, hunger, &c. then the blood

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moves slower ; and does not attenuate by its attrition, particles, sufficient to fill and keep properly extended, the secretory vessels ; which relax and become palsical : then the courage turns into cowardice, the liveliness to heaviness, and the wit to stupidity. Take the most intrepid son of Mars ; bleed, purge and allow him spare living, and he will soon become as great a coward, as before he was courageous. Take the greatest coward, give him rich food, generous wine, and high cordials ; which brace the fibres, increase the circulation and secretions ; and he will soon become brave amidst the most imminent dangers. The effects are answerable to the causes ; increase the cause, and you necessarily produce a proportionable increase of the effects : so that having a certain standard to go by, if we know one, we can judge of the other ; which is nothing more than finding a third from two things given.

If the solids are too lax, the heart beats slowly ; the arteries contract proportionally ; and the blood moves slower, than is needful, to attenuate and prepare it for secretion, which is interrupted ; consequently,

ly, the nerves have not a sufficient supply, to enable them to carry an impulse, sufficient to give the soul a full and sufficient idea of the object. Whence arise faint, languid, melancholy, lethargic, and imperfect ideas ; the person is slow, heavy, dull, and stupid. Hence we see the absurdity of supposing a change in the effects, without first making a change in the cause, which produced the effects. Some people are born with imperfect nerves ; the blind do not see, because their optic nerves are incapable of receiving or conveying impulses ; but the soul being imprisoned within this material body, has no other instrument appointed for it to see by, but the optic nerves ; which are incapable of performing their office : the incapacity does not reside in the soul, but in the body. A blind man's soul is as capable of seeing, if placed in a body, whose nerves are able to perform their part, as one that has the sharpest sight. Repair the blind man's optic nerves, and he immediately sees ; and so of the other senses.

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Again, if the nerves have not had time, to dilate and unfold themselves; but remain in so relaxed a state, as not to be able to display their actions; then the ideas are faint, languid, and imperfect: because the impulse is not strong enough to excite a full conception of the object. Sometimes the impulse is lost, before it reaches the soul; then there is no perception. This is the case in childhood and infancy. The one has imperfect ideas, and is unable to retain them long; because the finest fibres of the brain are not yet unfolded; which they do by degrees, as they advance in years; which is the reason why children are scarce able to remember any thing, till they are three or four years old. The ideas, which they receive before that, are soon lost, upon the removal of the object; because of the faint impression they make. If the nerves never form perfectly, then the person is more or less stupid and idiotical, all his life.

If the nerves are impaired by time, as in old age; for old people's nerves are pursed up, shrivelled, and contracted; then
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the soul has few and faint ideas of the present objects, through the impediment of the nerves. In extreme old age, they become so purged up, as scarce to give the soul any perception. But old men have the free use of what they received, before time impaired their nerves: they talk of things passed, with the same degree of exactness they then received them; though, about present objects, they seem as children and fools; as the external organs of sense are hardly able to receive impressions. But the internal fibres of the brain, being more lax than the external, do not contract and dry up so soon. Therefore they are able to excite perceptions in the thoughts, when the external avenues are entirely blocked up. Whence we discover the difference between sensation and perception. Sensation, as I have already observed, ariseth from the application of any object, to the surface of the body, which is capable of giving an impulse to the nervous æther. Perception is that faculty of the soul, whereby it discovers the contact of the object with the animal æther. If, therefore, the nerves, and nervous æther, are quite

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dried up in the external senses, yet it may circulate in the brain, sufficiently strong, to raise perception in the soul; which may be kept up by the soul's collusion upon the æther. The nerves, indeed, in this case, have lost their impulse from external objects; and the nervous fibres of the brain become more elastic: and were men to live much longer than the common period of life, they would lose perception as well as sensation. And the nerves of the brain would dry up, as well as those of the external senses.

Those objects, that raise an easy motion in the animal æther, affect the soul with pleasant ideas. Thus, joy gives an impulse to the animal æther, which makes it move more swiftly; the heart, in consequence, hastens its contractions; the arteries beat faster; and the secretions, being increased, keep up a pleasing good humour. And if agreeable objects present themselves to the senses, they add to the good humour; which is always more or less, as the causes are more in number, greater or less in quantity; for every sensation, or passion, impresses

impresses a different motion upon the nerves. If joy is in too great an excess, then it rarifies and expands the animal æther too much, especially in bilious habits; whence inflammatory fevers, pleurifies, temporary madness.

Again, great sorrow, fear, or disappointment, abates the motion of the animal æther; contraction of the heart and arteries; the circulation of the blood; the elasticity of the vessels, &c. whence, upon a sudden fright, or commotion, palpitations and flutterings of the heart, indigestion, loss of appetite, flatulences and crudity, purging, discharge of pale urine, &c. arise. And if these remain long, they bring on obstructions and scirrhus swellings, costiveness, &c.

From whence arise the different inclinations and desires of different individuals? from nothing else but the constitutional temperaments, more or less diversified, in every individual.

Musick is agreeable to the soul, as it raises a uniform and regular motion in the animal æther ; and different tunes please different people, according as they affect their nerves ; and if they are too gross to receive any impulse from musick, it is no more agreeable. If the nerves are vitiated, then a sound, disagreeable to the nerves in a state of health, will prove agreeable to the nerves in that vitiated state.

If the auditory nerves are too lax, or too contracted, and dried up, the person will be deaf, or too quick in hearing. I was told of a lady, whose auditory nerves were so elastic, the effect of a long nervous fever, that she could not bear the smallest sound, without great uneasiness. If a person wrote at a table, in the farthest corner of the room from her ; yet the motion of the pen affected her, though in bed, with the curtains drawn, as the rasping of iron. How are we roused, by some kinds of musick, into martial rage and fury ; and, by others, into jovial mirth and pleasure : melted by some into compassion and tears ;
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while others excite painful sensations in us, which discompose the spirits, and enfeeble the whole system. As there is a sort of music to excite martial courage, so there might be a concert of discordant sounds, to inspire cowardice, consternation, and despair.

Thus we see, that the bodily organs may be so disordered, or the stimulus, applied to them, so great, as to put it out of the soul's power to suspend or contract them ; and though it is the source of all motion, both voluntary and involuntary, yet it may be reduced to an inactive, passive state ; or forced into involuntary action. Poison, received into the stomach, throws it into so strong and convulsive motions, that the soul cannot, by any effort or exertion of its power, prevent it. The fæces and urine, when in large quantity, or very much corrupted, will sollicit and procure a discharge, without the consent of the soul. In an inflammation of the brain, the soul is interrupted in the regular exercise of its faculties, in spite of all its efforts

forts to prevent it. In an inflammatory fever, the heart redoubles its contractions ; dust in the eye causes tears ; acrid matter, applied to the nerves, causes convulsive contractions of the muscles, in defiance of the soul.

Though all voluntary motion proceeds from the immediate influence of the soul, yet some of the voluntary motions, by the force of custom and habit, come at length to be performed, with little or no attention of the soul ; though it has full power to begin, or stop the motion, when it pleases. Thus a man may walk, and not be sensible of it ; have an object before him, without seeing it ; and put his hand to a thing, without feeling it ; because he is intent upon something else ; therefore overlooks these smaller sensations ; and these voluntary motions are, in some degree, mechanically performed.

C H A P. IV.

OF THE SPIRITUAL LIFE OF MAN.

HAVING now considered man as vegetable ; and likewise as an animal, composed of a body and of a soul, or principle of animation, capable of influencing the body, and being influenced by it, according to the mechanical laws of matter ; I shall now proceed to take a view of the spiritual life of man, or, to consider man as a creature capable of religion ; which is the only thing which distinguishes men from brutes.

Man was, by God, created in innocence and rectitude ; and into his nostrils was breathed the breath of life ; whereby he became capable of, and disposed to, receive virtue and religion. This preternatural gift, *this breath of life*, gave him a superiority over every beast of the field, fowl of the air, and fish of the sea ; and in this *alone* consist, the perfection and excellency of man.

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This divine spark, furnished him with powers, sufficient to attain the end designed for man, ETERNAL BLISS ; which was to commence after such a trial of his obedience, as should seem sufficient to the divine wisdom. And as part of man has his original from heaven, and part its foundation in the dust ; so, the earthly is by nature perishable ; but in order to prevent man's material part, from following its own nature, and turning to corruption ; God created the *tree of life*, with such virtue, that, by eating thereof, such a change should be produced in the body, as should qualify it for eternal life. But Adam, by his disobedience, lost the benefit of the tree of life : and the consequence God declared unto him, saying, DUST THOU ART (meaning his bodily part) AND TO DUST SHALT THOU RETURN.

The communion, influence, or operation of the Holy Spirit, whereby man was intitled to the dominion over the rest of the creatures ; and is that principle, which distinguishes a man from a beast, was also withdrawn at the fall. Accordingly, though all
nature

nature was willingly obedient to the will of man before the fall ; yet immediately after the fall, when man had almost lost the principle, that distinguished him from the rest of the creation ; and entitled him to the obedience of all other animals ; they became disobedient, fierce and cruel. If the *image of God, the divine influence, the operation of the Holy Ghost, or the breath of life*, had been wholly withdrawn, then, man would have retained nothing to distinguish him from other animals : but it was not completely lost by the fall ; mankind retained some remainder of it, some vestiges of it, as well as of the dominion which was originally founded upon it : otherwise man would not have long continued king of the creation.

Man had not, after the fall, the divine principle, closely embracing his nature within and without ; and always abiding in him as a divine nature, making up the perfect man, i. e. making man perfect, with regard to that supernatural and spiritual perfection, originally designed for him ; and for which this union of the divine spirit with the soul

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and body, as it were a third principle, was necessarily required. Yet God still continued some inferior communications of his holy spirit with man; though now only as a principle EXTRINSICAL to his nature. Thus it still continued, as the light of the rational faculty. So the communications of the spirit are owing to those suggestions of prudent and reasonable thoughts, which are necessary, not only for the good management of the affairs of this life, but also for the concernments of religion and a future state.

By the influences of the spirit, the Jews were enabled, if not wanting to themselves, to perform that duty, which their law required of them, as a pedagogue to bring them to Christ. By them also, the Gentiles, who had not the law of Moses, were enabled to be a law unto themselves; thereby they had the work of the law written in their hearts; and did the things contained in the law. The teachableness, which the Gospel requires, called the *drawing of the Father,*

Father, is the effects of the operation of the Holy Spirit. Yet, these inferior communications of the spirit, these remainders and footsteps of the Divine Image, as a principle only EXTRINSICAL to our nature, are not, of themselves, sufficient to enable us to perform the duties, required by God, as conditions to entitle us to eternal bliss in the kingdom of heaven; which is the gift of God, and no way due to our nature, or to our best performances.

The inhabitation of the spirit, as an internal principle united to our nature, and not an inferior communication of it, as a principle only extrinsic to our nature, was necessary to our first parents themselves, in a state of innocency, to exalt them to that bliss, for which God designed them. Therefore it must be much more so to their fallen posterity. But, by the death and passion of our Saviour Christ, the divine image or spirit of God, as an inherent principle, is restored to us; and thereby we recover that happy state, which Adam lost by his fall. Christ rescued us by satisfying the penalty of Adam's transgression; and stating him-

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self the Mediator of a New Covenant, betwixt God and man ; by the observation of which, we may again recover that happiness, originally designed for us.

In our christian baptism of the spirit, we receive the spirit of adoption, and are restored to that divine image, which Adam lost by his fall. This is evident from the expressions used concerning it in Scripture. It is called *the renewing of the Holy Ghost ; the being renewed by the spirit of our mind, i. e. by the spirit* in our mind, as St. Chrysostom explains it: the NEW MAN, *which is renewed in knowledge, after the image of him that created him.* By all which is properly signified, the restoring a thing to its former state, which it once had ; but lost ; and not making a thing new, which had never been before. None have that quickening spirit (now restored by Christ, who purchased it again, and bestowed it on his church, as a triumphal gift upon his ascension) 'till he receives it in the christian baptism of the spirit ; which is therefore called regeneration ; as being that, by which
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this new life is first infused into us. And the author of the epistle to the Hebrews observes in general, concerning all those Patriarchs and other holy persons, who, by their faith, pleased God, before the coming of our Saviour; that they could not WITHOUT US be made perfect; the spirit, as has been observed, is necessary to constitute the perfect man; which the apostle calls *whole*, consisting of spirit as well as soul and body.

This spirit was not given by the works of the law (which could not make the comers thereunto perfect, being only the bringing in of a better hope, by which we draw near unto God) but by the hearing of faith, i. e. by the Gospel. Accordingly the Evangelist tells us, that it was not given till Jesus was glorified; this being a particular part of his testament, it could not be of force, till the death of the testator. And thence our Saviour himself distinguisheth betwixt the presence of the spirit with his disciples, as an external assistant, while himself was alive with them, and that inhabitation thereof, as a God in a temple, which they were only

only afterwards to receive upon his ascension. *For he dwelleth with you, says he, and shall be in you.*

From these principles, many inferences, of the greatest importance, might be drawn ; we shall here only beg the readers patience to hear two or three.

It is evident, that no moral duties whatsoever, that can be performed out of the communion of the church, however the assistance of the holy spirit, as an external principle, be necessary to produce them, can ever give an immediate title to the eternal bliss in the kingdom of heaven. For even these inferior communications of the spirit, were continued only in consequence of our Saviour's undertaking to atone for the sins of man ; and was designed to prepare and enable us, to receive the covenant of grace. And whosoever goes on in sin and wickedness, and refuses the terms of the Gospel, does, ipso facto, deprive himself of the inferior communications of the holy spirit, and forces God to withdraw it from him ; for he declares he
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will not always contend with us. And man then becomes in a level with the brutes, and inherits no principle, that possibly can distinguish him from them ; but only this, that upon his repentance, and embracing the Institutions of God Almighty, he may find mercy ; and his sincere repentance, and his after willing obedience may be rewarded with eternal bliss, in the kingdom of heaven ; which never was designed for other animals ; and thereby can, by no possible means, be attained by them. And none, without performing these conditions, can have any more title to the kingdom of bliss, than a horse or other animal.

The exceeding great and precious promises of the New Covenant, which Christ hath purchased for his church, can never be obtained by any other means, but those which he hath prescribed in the Gospel, for conveying of it ; and they are none other than the christian sacraments, by which this New Covenant itself is transacted and maintained ; and by which we are made and continued members of the church. Hence our blessed

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Saviour assures us, that except we be born again of water and of the spirit, we cannot enter into the kingdom of heaven : and unless we eat the flesh of the son of man, and drink his blood, in the eucharist, we can have no life in us ; and that it is by our eating his flesh and drinking his blood, that he dwelleth in us, by the inhabitation of his spirit, and we in him, as members of his body, the church ; and that thereby we have eternal life ; and he will raise us, raise our bodies, at the last day, by this quickening spirit, which dwelleth in us ; and shall quicken our mortal bodies. For our souls are in themselves, immortal.

From whence it appears, that as the baptism of water, restores the person to that primitive purity and simplicity, in which Adam was created, and placed in Paradise ; and as the baptism of the spirit or confirmation, infuses into him the breath of life ; and thereby the divine image which was lost in Adam, is reimplanted in him. So the constant participation in the sacrifice of the eucharist is as necessary for our continuance
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and growth in this divine life of the spirit ; as our bodily food is for the support of our natural life.

If therefore we cannot have the spirit, nor any other benefits of the christian covenant, without an external participation in these sacraments, by which the covenant is transacted and maintained, and which God has appointed as the only ordinary means of conveying them to us. For we cannot be sure of, nay, expect God's supplying the want of these ordinary means, which himself hath appointed, by extraordinary and uncovenanted favours, but upon a perfect impossibility, either physical or legal, of obtaining them.

And if these sacraments derive their whole efficacy, not from their own nature, but from their consecration.

And if this power of consecrating them must be derived from God, who only has the disposal of these benefits, conferred by them ; so that none can validly consecrate

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them

them without an authority, derived from him for that effect.

And if none can lay any just claim to that authority, but they who received it from those, who had power to give it them, in a continued succession from the Apostles, who at first received it from Christ.

This will necessarily oblige us, as we value our eternal salvation, to a strict dependence upon, and submission to them, who thus have alone this power of consecrating the sacraments.

For, without a commission from God, 'tis as impossible for a person validly to administer the sacraments, to the benefit of the receiver, which is a New Creation, as to form a man out of dust, with all the qualifications and properties, with which he is endued. But none can act, as commissioned from God, who do not observe the conditions required of them; for the divine influence, which is the essence of a sacrament, can never be supposed to accompany these institutions,
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when performed contrary to the revealed will of God: for it is, in obedience to his divine precepts, that he promises his blessings. Hence we see the invalidity of lay and schismatical administrations; the one had never a commission; the other has forfeited it, by giving up the depositum committed to his trust: he has broke his covenant with God, and entered into covenant with the devil.

Therefore he must have a very imperfect knowledge of the nature of the christian priesthood, and of the sacraments; who thinks, that a sacrament can be, in whole or in part validly performed by any such. One would believe that a person with half an eye might see, how destructive such an opinion is, both to the institution of the priesthood, and also to christianity. But timidity and human prudence suggested these opinions, and perhaps, in time, will offer us, what they think reasons, or to give up our senses with our religion. And forsooth these very men would have it thought that they suffer for truth and righteousness sake, yet can dis-

pense with both, when human prudence calls for it.

I should now, in the last place, proceed to consider the symptoms, causes and manner of cure, in nervous diseases ; but I am well aware some objections will be made to the preceeding doctrine, which I am here inclined to anticipate.

If our five senses, which are common to us with brutes, are the only source and inlets of those ideas, which are the intire ground work, and first foundation, upon which we raise the whole superstructure of all our knowledge, both human and divine ; and if that maxim of logicians is to be taken for a sure and fundamental truth, “ nihil est
“ in intellectu quod non fuit prius in sensu,” then all discoveries we can make in things, temporal or spiritual, together with the most refined and abstracted notions of them in the soul of man, take their rise originally from sensation ; and if we cannot think or be conscious of thinking, till we have some idea of an object to think upon ; and if with-
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out our senses we can have no idea of any thing without us : then what will become of all our knowledge of the things of another world ? of all revealed religion ; and the truths of morality ; and the mysteries of christianity ? I answer, that seeing we can have no idea, but from sensible, material objects ; therefore we can have no idea of God, Angels, or any immaterial substance, or indeed any thing beyond the Sun and Stars ; yet I trust in God, our religion is very safe.

At our birth the imagination is entirely a *tabula rasa* or perfect *blank*, without any materials, either for a simple view or any other operation of the intellect. We are not furnished with any *innate* ideas of things material or immaterial ; nor are we endued with a faculty or disposition, of forming purely intellectual ideas or conceptions ; independent of all sensation : much less has the soul of man a power of raising up to itself ideas out of nothing, which is a kind of creation ; or attaining any first principle ; exclusive of all *illation* or consequential deduction from ideas of material objects ; without which the soul of man, during its union
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with the body, could not attain even to the knowledge of its own *existence* : Deprive the body of seeing, hearing, tasting, and smelling; and the soul would not be able to know any thing but what the hand or body *felt* : and if he was deprived of that sense too, the soul would be utterly void of all ideas, and consequently all knowledge.

As therefore we have no idea of God, we are obliged to come to the knowledge of his very existence, not from any idea we have of him, or from any direct intuition of the intellect; but from the observation and reasoning of the mind, upon the ideas of sensation; that is from our reasoning upon the works of the visible creation: and for want of a simple and direct idea of him, we frame to ourselves the most excellent conception, of him we can, by putting together into one, the greatest perfections, we observe in the creatures, and particularly in our own reasonable nature, to stand for his perfections. Not most grossly arguing and inferring that God is such an one as ourselves, only infinitely enlarged and improved, in all our natural powers and faculties; but concluding,
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that our greatest excellencies are the best, aptest, and most correspondent representations of his incomprehensible perfections; which infinitely transcend the most exalted of what are to be found in any created beings; and are far above out of the reach of all human imagination.

The rise and whole extent of our knowledge, of immaterial objects, are accounted for, from the ideas of sensible objects; from the necessary consequences we draw from their existence, to the existence of things not sensible; and from that manner of conceiving these, which we afterwards naturally fall into, by the help and mediation of such things as are within the compass of our present sphere. Thus we conceive the knowledge of a spirit, by the mediation of our thinking, and the various modes of it, exercised on ideas of sensation. If we had any innate ideas of spiritual things, they would be as direct and immediate as the ideas of sensible objects are: they would be as true and proper representations of them, as they are in themselves;

selves ; and no way analogical, as they now are. We have not even the least direct idea, or perception, of the purely spiritual part of us ; nor do we discern any more of its real substance, than we do of an angel. We are so far from an exact view, and intuitive knowledge, that we are forced to argue, and infer its existence, from our observation only of such operations, as we conclude could not proceed from mere matter.

And, because we have no direct idea of it, we express its nature, as we do that of a spirit in general, by the word *immaterial*. And as we cannot form one thought of our soul, otherwise than as it is in conjunction with the body ; so neither can we conceive any of its operations, but as performed together with bodily organs : and therefore it is, that we are under the necessity of expressing the *modus* of them, in words borrowed from sensation and bodily actions. The mind, or spiritual part of us, cannot, by any direct or reflex act, look upon or into itself, any more than it can discern
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the soul, in its state of separation from the body.

And so it is, with respect to God and his attributes ; we can have no direct view, or intuition, by the eye, of body or soul, (for indeed they are both one) of any thing in the divine nature : therefore there is no way of beholding him, but in the *mirrour* of the visible creation ; and particularly in ourselves. So we behold his wisdom, in our thinking and reasoning ; his power, in our worldly dominion and power ; his goodness, in the rectitude of our own most commendable affections. Not by adding *infinity* to each of these, as some have grossly mistaken, so as to stretch our imagination, as far as we can, to infinite thinking, infinite power, infinite rectitude ; but by adding infinity to those incomprehensible perfections in the divine nature, of which we have not the least idea, the least direct glimpse or knowledge. The true nature and manner of the present knowledge we have of things in another world is, by the apostle, very aptly described, by seeing

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through

through a glass darkly ; and our future knowledge of them, by seeing face to face. A glass, or mirrour, exhibits to us nothing of the reality and substance of the thing represented in it.

The similitude formed by the reflection of the object, hath no more of the true essence and properties of the thing itself, which it exhibits, than a mere shadow ; and is nothing more than the appearance, which perisheth with the removal of the object. Thus it is with those conceptions, which stand in our minds to represent God, and spiritual things.

Though the things they are substituted for, are of a quite different kind ; and though those substitutes are no more, in respect of them, than a fleeting, transient appearance only in the glass, is to the man himself, whom we see in it ; yet there may be such a likeness, proportion and *analogy*, between them, as may render our natural and familiar conceptions of worldly things apt and JUST representations of things *supernatural*,

pernatural, and particularly of the *divine nature*. In so much, that the knowledge we have of them, by that *analogy*, though imperfect, shall be, however, *true* and *real*; and all our just thoughts and reasonings upon them shall be solid and substantial; as long as they are kept within the due compass of these similitudes and representations of them. For then it is that men run into solicism and absurdity, into error and confusion, concerning God and spiritual things; when they, not contented with this imperfect degree of knowledge, by representation only, and analogy, will argue, from things merely natural, to the real intrinsic nature of these things, which now we can know no other way, but by that similitude, correspondence, or proportion, they bear to our natural ideas and conceptions.

So that in respect of all things relating to the *real, true* nature of immaterial beings, as they are in themselves, we are not as a man, who hath a very dim sight, or who can discern *direct, though faint, glim-*

merings of light, and hath some *immediate*, though no more than *confused* and imperfect views of visible objects ; but we are as a man born *blind*, in respect of light and colours.

As we can have no ideas of immaterial beings, from our senses ; neither have we any ideas of them that are purely *intellectual*, and entirely independent of ideas of sensation. We have not the least spark of light, or smallest glimpse, whereby to discern their real nature or essence, or any part of it. So that, thus far, it is not an indistinct or obscure perception, but no perception at all.

Therefore, all our knowledge of revealed truths and mysteries, is by *semblance* only, and *analogy*. Yet, since God has formed us to his own image and likeness, we have a firm reliance, trust, and dependance upon his wisdom and veracity, for such a just resemblance, proportion, and correspondency between the scripture types, which are natural, and the supernatural anti-types, as renders

renders that kind of knowledge solid and real ; the faith built upon it certain and firm ; and our hope well grounded and sure.

Then only we are in danger of running into error and delusion, and may be fatally deceived, when we turn it into mere *metaphor* and *allusion* only ; or when we strain that analogy, by which we conceive things spiritual, to an undue and literal comparison with things natural and human ; and in such instances as never was intended by the wisdom of God. Or, lastly, when we begin to imagine that we have, in any degree, a direct and immediate perception of things supernatural.

The mind of man, while it keeps within its own proper *sphere*, acts with freedom and security ; but when it strives to exert itself beyond its native powers and faculties, then it sinks into weakness and infirmity, and is ever liable to endless mistake and error. It hath no direct perception, or *immediate* consciousness, beyond things sensible

sensible and human. So that in all its noblest efforts, and most lofty flights, it must ever have a steady eye to the earth, from whence it took its rise ; and always consider, that it mounts upwards with *borrowed* wings. For when once it presumes upon their being of its own natural growth, and attempts a direct flight to the heavenly regions ; then it falls headlong to the ground : where it lies grovelling in superstition and infidelity.

I shall now proceed to the third general head of my discourse, viz. to consider the symptoms and causes of nervous diseases.

S E C T. III.

C H A P. I.

OF THE SYMPTOMS AND CAUSES OF
NERVOUS DISEASES.

IN almost every disease, the nerves suffer more or less ; and there are very few disorders, which may not in a large sense be called nervous. But I shall here confine myself to those complaints, which proceed from a weak or unnatural construction of the nerves : the symptoms that arise from these causes are so many, various and irregular, that it is extremely hard, either rightly to describe, or fully enumerate them. They mimic almost every disease ; and indeed there are few chronic diseases with which they are not more or less blended and intermixed. I have, for method's sake, divided nervous diseases into different stages, but you must not expect accuracy or certainty in this ; because some of the symptoms, I
have

have mentioned in the second stage, may, in some patients, be found in the first, and *vice versa*. In treating therefore of the symptoms and causes of nervous diseases, I shall observe that method nature most commonly follows, and advance step by step along with the disease; taking hold of one end of the chain, shall endeavour to fathom it to the other; for all nervous diseases, from *yawning, stretching, &c.* to a mortal fit of an apoplexy, or raging madness, are one continued disorder, or the several steps of it.

A child may be born with weak nerves, and from original constitution liable to nervous diseases. Others, who have been born with strong, healthy and sound constitutions, may afterwards fall into them, from any accident, as a fall or bruise, wound, fright, bad and low diet, hard labour, injuries of the weather, intemperance, sensual pleasures; acute diseases, immoderate evacuations, &c. Those who have weak, feeble or relaxed nerves, have generally a small, weak, languid, and sometimes intermittent pulse; the strokes are seldom clean and free; their

their flesh is soft and yielding, loose and flabby; their complexion is white, fair, blanched or ash coloured. Those, who are subject to great evacuations, or have laboured under preternatural discharges from any acute disease; who run into purging or costiveness alternately, into floods of pale urine; or into profuse sweats upon little exercise; who have made too liberal a use of mercurials, have fallen into immoderate hæmorrhages; or have laboured long under a diarrhæa; women, who have purified oftener, or in greater quantity, than is natural; originally have, or generally soon have weak nerves. They are commonly of a cold constitution; apt to fall into chilling and coolness in the extremities; or frequently feel like a trickling of cold water down the back; and often fall into shiverings. All these signs proceed from too slow circulation and perspiration; which indicate a weakness and laxity in the vessels. For perfect health, free spirits, ease and cheerfulness, consist in the easy, pleasant and uniform performance of the animal functions, viz. a full circulation, free perspiration and

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regular secretions and excretions; when these are interrupted and forced, then nervous symptoms soon follow.

There is a transient species of vapours, which sometimes seizes temperate people, otherwise strong and healthy, of sound juices, and firm solids; such as lowness, restlessness, heaviness, anxiety, aversion to exercise, headaches, dimness of sight; these proceed from catching cold, which obstructs perspiration; from indigestion; or from a foul stomach. These symptoms vanish, in a little time, of themselves, or may be removed by a *cordial draught, gentle emetic, stomach purge, light diet or abstinence.*

Some people are endowed with such an uncommon delicacy of sensation, that, though usually in good health, they are subject to tremors, palpitations, faintings, fits, &c. from fear, grief, surprize, or other passion; or from any other cause that irritates or unusually affects their nerves. They are also more or less subject to indigestion, flatulencies, flying pains, irregular and partial fits of heat
and

and cold, frequent sighing, inquietude, pale urine, irregular spirits, &c.

Others there are, who are subject to some nervous symptom from the very contrary cause, viz. an obtuse or less sensible feeling of the nerves in general; which occasions indigestion, flatulence, either a want of, or too great an appetite, costiveness, looseness, flushing, giddiness, oppression about the *præcordia*, low spirits, disturbed sleep, &c.

From these two causes, most nervous diseases generally arise. The first may be either natural or produced. All children, compared with men, have their nerves very sensible, whence they are so subject to convulsive fits from teething, worms, acids in the *primæviæ*, and before the eruption of the small pox, &c. Some adults have so delicate and sensible nerves, that a vomit, smart purge, blister, sudden fright, &c. will throw them into convulsion fits. Women, whose nerves are generally more delicate and sensible than those of men, are most subject to nervous complaints. The variety of the quickness

of the pulse, in a healthy state, is owing to the sensibility of the nerves in general : and as the nerves in different parts of the body are endowed with various kinds of feeling, so they are more or less liable to be affected with the same disease. Therefore certain diseases affect some parts of the body more than others. In some epidemical diseases, the eyes, fauces or breast, in others, the intestines are most liable to be affected ; owing to the weakness and great irritation of these parts, by the application of acrid and morbid matter.

Besides a too great sensibility of the nervous system in general, there is sometimes an unnatural and depraved feeling in various parts of the body ; which subjects persons to extraordinary affections. For example, musk, amber-grease, pale roses, tansy, cheese, a cat, &c. will cause some people to faint, vomit, purge, &c. The disposition of the nerves of the stomach is the reason, that some kinds of food agree with some people, and disagree with others ; nay, even with the same person at different times.

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Some medicines have violent effects upon some, while they have little or none upon others. Hence we see that a delicate and unnatural state of the nerves, either in the constitution, or acquired by intemperance, &c. must dispose people to nervous diseases.

I come now more particularly to enquire into the symptoms and causes of nervous diseases.

The spleen and vapours are nearly synonymous terms ; the symptoms and causes are the same : only the vapours sometimes bring on fits, and as these fits are most frequently observed in women, we call the same disease vapours in women, and spleen in men. The spleen and vapours, improved upon the constitution, arrive at another stage ; and is then called the *hip*, or hypochondriacal melancholy : and is for the most part attended with a scurvy. So that the same causes, which produce the spleen and vapours, if allowed to continue long, will produce the hip, which, if suffered to continue

tinue, advances still further on, and makes a transition to madness. If the constitution is bilious, then the madness is raging and furious, called *mania*, *lunacy* or *frenzy*; if the habit is cold and phlegmatic, then the madness is a settled, fixed, mooping *melancholy*.

All nervous diseases arise from RELAXATION, or OBSTRUCTION: and as the one cannot continue long without producing the other, so they mutually exasperate each other; and, in a habit naturally disposed to nervous complaints, soon produce very troublesome symptoms, which, from the slightest, to the most severe, have their exacerbations and remissions. Many accidents in living contribute to make them irregular in their returns, and in the slightest cases they are seldom taken notice of.

Acrid, noxious matter, bred in the blood, from either of the above causes, will produce nervous symptoms, as violent periodical head-achs, irregular pulse, partial sweats, itching heats, flushing and irruptions suddenly

denly disappearing, in different parts of the body, *nausea*, wandering pains, convulsion of particular muscles, tightness at the breast, pain in the bowels, &c. This morbid matter, which occasions these and many other symptoms of the nervous kind, may arise from very different causes, as too much or improper food. For the end and design of eating and drinking, is to supply the waste of our bodies, and to keep up the due balance between the solids and fluids. The necessary friction and collision from the motion of our juices, in order to break and subtilize their parts, and to fit them for the animal functions, make a continual waste; to supply which, it is absolutely necessary to take a proper proportion of nourishment. By the rules of animal œconomy, there is a necessity of keeping up the ballance between the elasticity of the solids, and the resistance of the fluids, to preserve the individual in health. And when any of these two rules are long or greatly transgressed, by either taking more than is necessary to supply the waste, or by taking that, which from its natural quality, destroys the ballance; then
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the individual suffers in proportion as the solids and fluids are removed from the standard of health. Crudities and indigestion lay the foundation for the greater number of diseases, that torture and afflict human life. If a person, whose solids are tense and firm, wallows in luxury and riot, for any considerable time; he fills his blood with oily, sulphureous, and inflammable particles; which, being driven about with too great force and velocity, are thereby forced into the small capillary vessels, designed to receive the lymph, or thinner part. Thus inflammatory and acute diseases are formed, such as fevers, gout, erisipelas, rheumatism, &c. If these small lymphatics, by the force of the circulation, or grossness of the fluid, are torn and broken, then imposthumes, gangrenes, mortifications, &c. follow. But if the person pursues this course a little more slowly, and joins laziness or want of exercise to it, so that the acrimony and stock of bad humours increase, as the solids are relaxed, and weakened; then the slower, colder, the nervous and more chronical diseases are produced.

Also

Also a scorbutic or scrophulous habit, fevers imperfectly cured, and cutaneous disorders, when the morbid matter, instead of being thrown out upon the skin, is reabsorbed and deposited on the internal parts: produce nervous symptoms.

But above all, a wandering and imperfect gout, is ofteneft the cause of nervous diseases; it will occasion lowness of spirits, loss of appetite, *nausea*, sickness at the stomach, vomiting, palpitations of the heart, irregular pulse, difficult breathing, swimming and shooting pains in the head, delirium, mania, wandering pains now in one place then in another, flatulencies, cramps, convulsions, &c. These symptoms may proceed from an irregular gout; the matter of which, instead of going to the extremities, wanders through the body. When this morbid matter is carried smoothly on, without forming obstructions, or too violently irritating the nerves; then it gives little trouble: when it remains fixed in the extremities, or muscular parts, it occasions aching, goutish and rheumatic pains: when it settles on the vis-

cera or more sensible parts, it stimulates the nerves, and produces many nervous symptoms, which are greater or less, according to the sensibility of the nerves. This happens to people of weak and delicate habits, and sensible nerves; especially to women, who have seldom a true gout, but a wandering gouty humour; if the constitution is a little stronger, then the patient is afflicted with cold rheumatic pains, and sometimes with a regular fit of the gout: if the vital organs and the vascular system are sound, then the arthritic matter is thrown upon the extremities; by which means the body is cleared of it. In the cure of the gout, rheumatism and *sciatica*, nothing is better than issues, blisters, cataplasms, pedeluvium, antimonial, camphorated and cordial diaphoretics, with a little venice treacle, &c. the constant use of bitters, steel and the bark.

An obstruction of the *menfes* or hæmorrhoids, also setons, issues, old sores, too suddenly dried up, or the sweating of the feet obstructed by cold, will occasion nervous symptoms. We see, at the time of life,
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when the courses cease, and for some months after conception, the change of the circulation, the distension and irritation of the womb, occasion *nausea*, vomiting, faintings, depraved appetite, convulsive fits, asthma, heaviness, and flying pains, flatulencies, head-ach, &c. As these symptoms arise not from the quality, but from the quantity of blood; therefore the *plethora* is to be removed most effectually by bleeding, or by an emetic or emmenagogue, as indications direct.

We will now consider the particular symptoms with their causes; in the order they generally observe.

1st. The first symptoms are a dull, heavy uneasiness, debility, faintness, a sense of great emptiness about the stomach, a yawning, gaping, stretching out the arms, twitching of the nerves, sneezing, sometimes drowsiness and lethargy, heaving up the breast: as these symptoms have little pain, but a kind of weariness, they are neglected. The complexion becomes wane, pale, and not so lively, the eyes appear dull

and faded, the appetite is faint and unequal, returning by fits, and if meat is not immediately given, the patient is like to faint away, and the appetite goes off; at other times the hypochondres are so inflated with wind, that the patient cannot eat: he complains of heartburns, belchings, and bilious vomiting, pain in the pit of the stomach, attended sometimes with shortness of breath, or symptomatic asthma, tickling cough, and at other times with an inflation or visible swelling; and the patient perceives unusual smells. After these symptoms have continued some time, they produce lowness of spirits, faintness, anxiety, watching and restlessness; sometimes great timidity, a dizziness of the head, inveterate pains in particular parts, about the size of a crown, sharp and acute pains in the temples, and other parts of the head; sometimes there is a tingling noise or hissing sound, a thumping, or beating in the inside of the head; the temporal arteries, at times, beat so strongly, in the night particularly, as to occasion so considerable rubbing or friction against the bed-cloaths, as to be heard by a bystander. The patient perceives

perceives a faintness to seize him, which is succeeded with motes, clouds, and mists, floating backward and forward, in the atmosphere before his eyes; a coldness and chillness seize the extremities; a burning in hands and feet; flushing, especially after meat; cold damp sweats, fainting, and sickness, which is removed by a lax stool. The patient is very irregular in going to stool, sometimes he is too costive, at other times lax; the stools are of various colours, sometimes of a mucous, jelly-like substance, at other times black, dark brown, green and yellow; sudden flushes of heat, especially in the night over all the body; shiverings, a sense of cold, in certain parts, especially down the back, as if water was poured on the body; at other times, an unusual glow of heat; troublesome pains between the shoulders; pains attended with hot sensations; cramps, and convulsive motions of the muscles, or a few of their fibres; sudden startings of the tendons of the legs and arms; large and frequent discharges of pale and limped urine. Some have all these symptoms, others have but some of them; but
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a ptyalism, or discharge of phlegm from the glands of the throat, generally attends all the symptoms. In the first period you may observe one good day, and another bad; and also monthly periods: but these periods or crises are very uncertain and irregular, as I observed before. The weather too, has a surprising effect upon nervous people. When these symptoms have continued some time, they so relax the fibres of the solids, that the digestion is very imperfectly and slowly performed, consequently wind, crudities, &c. are bred in the *primæviæ*, which produce many more and dismal symptoms, as :

2dly, Frequent rifts, belchings, hiccups, strange grumbling, croaking, and murmuring in the bowels; troublesome heartburns, sour and very acrid belchings, and squeamishness; vomitings of watery stuff, tough phlegm, corrupted bile, a visible swelling and inflation of the stomach, especially after eating; weakness and trembling of the limbs; wandering pains, suddenly starting from one place to another; wandering pains in the sides, back, knees, ancles, arms, wrists,

wrists, not unlike rheumatic pains; cold shiverings running down the back bone, often after making water, like the cold fits of an ague; sometimes there is a heat in one part of the body, then in another; the head is generally hot, even while the rest of the body is cold and chilly; the hypochondres, but most frequently the right one is swelled. Now the patient has vertigos, long faintings, the slightest motion raises pains in the head, which often return periodically; also moist, cold, clammy sweat, greatest commonly about the temples and forehead, obstinate watchings, disturbed sleep, frightful dreams, and sometimes a drowsiness and too great an inclination to sleep, the night mare; often starting when awake, terribly affrighted with horrors: any sudden surprise greatly affects and often throws the patient into fits and faintings, tremors or palpitation of the heart; the pulse very variable and irregular; a sense of suffocation, frequent sighings, convulsive twitchings of the muscles, tendons and nerves of the back, loins, arms, hands, and a general convulsion affecting, at once, the stomach, bowels, throat, legs, arms, and indeed almost the whole body, in which

which the patient struggles as in a violent epileptic fit. The patient sometimes falls into a *catalipsis* and *tetanus*, and sinks gradually into a nervous atrophy : has generally a quick apprehension, forgetful, unsettled and constant to nothing but inconstancy, jealous ; has wandering and delirious imaginations, ridiculous fancies, groundless and impertinent fears, often complaining of his sufferings and calamities, no person suffering equal to him ; he supposes himself a dying, when perhaps there is no great danger, while a person under another disease, as a consumption, is hardly persuaded there is danger, when he is really dying ; sometimes he is chearful, gay and agreeable ; by and by peevish, heavy and gloomy ; sometimes 'tis impossible for him to keep from crying and weeping, with great extremes of grief and anguish ; and these sudden fits of convulsive crying return without the will or consent of the patient ; at other times he falls into immoderate fits of laughing and joy, which is as involuntary as the other ; sometimes he loves a person to despair, anon hates him to as great excess ; presently wills a thing, by and by is entirely against it. If these symptoms are not
soon

soon cured, they soon terminate in hysteric fits, epilepsy, hyp, palsy, madness, apoplexy, or in some mortal disease; as the black jaundice, dropsy, consumption, &c. But before we enter upon the second stage of nervous diseases, we shall here stop a little, and endeavour to investigate the causes of the symptoms already mentioned.

I.

A dull, heavy uneasiness, debility, faintness, yawning, gaping, and stretching of the arms, &c.

These symptoms are occasioned by a lax state of the solids, and a deficiency of the animal æther; which is hardly able to communicate an idea of sensation to the soul. The relaxation of the fibres of the muscles is the occasion of the heaviness and weariness of the limbs, and unwillingness to move; the gaping, yawning, and slight twitching of the nerves, and sneezing, is a mechanical effort to throw off the offending matter.

II.

The eyes appear dull and faded ; motes, clouds, or mists, float backwards and forwards before the eyes, and the taste is vitiated, &c.

The nervous fibres, that compose the membranes of the eyes, being relaxed, do not secrete so fine humours, nor make them move so quickly as before ; therefore the patient's eyes appear heavy, and not so lively. Whence we see, why bilious and lustful people have that sparkling and glance in their eyes ; as also why, in anger, fire seems to proceed and dart from the eyes. When the elasticity of the fibres of the eye are much relaxed, then the secretions are interrupted ; and the crystalline humours, being grossly secreted, attract each other, in certain points, before the retina, in too large and gross particles, to allow of vision. These points darken some parts of the retina, which appear to the patient real motes. Sometimes a dimness of sight, and a thick smোক, or mist, before the
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the eyes, proceed from a disorder of the stomach. Again, when the numberless nervous papillæ, that make up the organs of taste, are too lax, or too tense; then hot and spicy meats appear tasteless and cold, while the tasteless and insipid food appears as hot as fire.

III.

Sudden and uncommon sensations of cold or heat, in different parts of the body, sometimes suddenly succeeding each other, which people, subject to nervous diseases, often feel in different parts of the body,

Are owing to the stagnation and slower motion of the fluids, in the smaller vessels of these parts, occasioned by the diminution of their oscillatory motion. The sensation of heat in different parts of the body, which they are likewise subject to, arises from a contrary cause, viz. an increased oscillatory motion in those parts, from an irregular distribution of the nervous fluid. The languor of the solids, in the surface of the body, is scarce able to keep up the circulation; whereupon the

perspirable glands are obstructed ; and the morbid matter, that should have gone off by perspiration, is thrown upon the internal viscera ; the heart is stimulated thereby, into quicker contractions, which drive the superfluous humours upon the brain ; upon which the fibres redouble their force, to disengage themselves ; hence arise those shooting pains, that dart through the head ; those thumping pulses, &c. For the natural heat of all animals is owing to the regular circulation of the fluids ; but when this uniform circulation is interrupted, by a stagnation or slower motion of the solids, or by any acrid matter, stimulating and irritating the nerves ; then the small vessels become in a great measure obstructed, or are excited into uncommon vibratory contractions. The cold shiverings, in the beginning of fevers, agues, inflammations, &c. are owing to the obstructions of the vessels, which, along with the acrimony they soon contract, so distend their coats, and thereby irritate the nerves into convulsive contractions, in order to dislodge the morbid matter. Whence cold is soon

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succeeded by heat, inflammation, sweat, &c.

IV.

The tingling noise, hissing, and other disorders of hearing

Are owing to a relaxation of the drum of the ear and auditory nerves ; which is increased by damp, moist, hazy, overcast weather ; and enables the patient to guess pretty well at the changes of weather, before it comes. It happens, sometimes, that the fibres of the ear are too much contracted, whereby the organs become so acutely sensible, as to be susceptible of the smallest impression, from the least breath of air ; which occasions the patient to be much incommoded from wet, hazy weather, when the air is full of moist corpuscles.

V.

Lowness and dispiritedness, without pain or sickness ; limpid urine, and irregularity in going to stool

Arise from a want of a free circulation and perspiration ; frequent discharges of
large

large quantities of limpid and pale urine, are as dispiriting and sinking symptoms, as any that attend nervous diseases ; it is chiefly owing to an obstruction of perspiration ; and a relaxation, and too great an irritability of the urinary vessels ; and lax, hardened, and indurated stools, arise from the same causes, viz. obstructed perspiration, and a relaxation of the fibres of the bowels ; which impedes their peristaltic motion, and the descent of the fæces ; they soon putrify by stagnation, and send into the mass of fluids, morbid matter, which is conveyed thither by the absorbent vessels. The variety of colours, observable in the fæces, arises from their greater or less degree of putrefaction, and the greater or less quantity of bile that is mixed with them.

VI.

Wakefulness, and want of sleep

Arise from the nervous fibres of the brain being continually in motion ; which keeps the faculties always attentive to those perceptions, that successively enter by any of the senses. For it is necessary to procure
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a sound sleep, that the nerves of the brain abate of their motion ; and this abatement is designed to restore them to their proper elasticity. As want of sleep is a very troublesome, dispiriting, and weakening symptom ; therefore we must, by all means, endeavour to procure rest. We see that thro' the constant impulses, that exercise the nerves, and through much attention to any business or study, a person finds himself heavy ; because, by the constant exercise of the animal æther, in conveying impulses to the soul, of every object that presents itself, in the day, the nerves lose their elasticity, the animal æther is much wasted, and circulates more languidly. But sleep is designed to recover the elasticity of the nervous fibres, and so it does ; for the secretions being more plentifully performed in bed, the nerves are thereby nourished and rested, and recover their former briskness with the day. Hence we see the use of long sleep to nervous people ; but when they have been some time under that complaint, they sleep little, and seldom without dreaming ; because the impulse conveys sensation

fation to the sensorium too briskly, and overpowers the inclination to sleep; and the nervous fibres, that compose the several organs of sense, are so strongly agitated in the time of sleep, as to make the soul attentive to the ideas these motions represent. For, in dreaming, the organs of sense have a power to revive ideas, that depend not upon the immediate presence of objects, but upon the degrees of their mechanical motions; for these motions, being increased in the organs, are also, from the same laws of mechanism, increased in the nervous fibres of the brain; whereby they raise a perception of any object they are capable of conveying. If we dream of banquets, then the nerves of taste are chiefly affected, &c. These delusive perceptions may affect the person, when awake; for there are certain perceptions of objects, which always appear to the soul, when such and such degrees of motion, are communicated to the sensorium.

VII.

Frequent rifts, belchings, hiccups, croaking and murmurings in the bowels, heart-burn, inflation of the stomach, vomiting of corrupted bile, tough phlegm, and sour acrid matter, wandering pains, &c.

When the coats of the stomach are relaxed, their muscular motion is impeded; the food is slowly and imperfectly digested, and the chyle is not with sufficient force thrown into the absorbents: what remains in the stomach longer than the laws of the animal œconomy require, breeds crudities, acrimony and wind. For all our aliments, especially those of the vegetable kind, abound with air; which, by the fermentation and putrefaction, it undergoes in digestion, is separated, gets vent, and produces that flatulence or wind, which many people, not nervous, are troubled with. Indeed, strong and healthy people are seldom troubled with wind, unless they eat too much, or of too heavy solids, or drink of fermenting liquors: in this case, the viscera being found and elastic,

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and the nerves endowed with a due degree of sensibility, the digestion is regularly and uniformly carried on ; and the aliment does not lie so long as to separate such a quantity of air, as to give any trouble. But when the stomach is much relaxed, and the saliva and other juices, in some degree of putrefaction ; then there arise many and various complaints, such as want of appetite, *nausea*, faintness, low spirits, watchings, swelling of the stomach and bowels, with violent and excruciating pains in them ; tightness and oppression about the *præcordia*, difficult breathing, a sense of weight at the stomach, belching, *globus hystericus*, giddiness, shooting pains in the head, &c. if the wind gets vent by the superior orifice of the stomach, it goes off in hot, sour and acrid belchings, risings and hiccups ; but if the acrid *myasma*, or corrupted steam does not make good its way by the mouth ; then it descends into the bowels, and produces spasms, flatulencies in the *primæ viæ*, and strange grumbling and murmuring in them. The first scene is acted in the stomach, which, from indigestion, produces wind and acrimony, which
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are the cause of the greatest, most painful and frightful symptoms in all the stages of nervous diseases. When the aliment lies in the stomach longer than is consistent with the laws of nature; then, by the heat, hurry, and tumult of the bowels, a great quantity of wind is generated; which, being inclosed and heated, and, of its own nature, tending to putrefaction, soon becomes acrid, like stagnant air, but more so, as being more confined; and the longer the chyle lies in the stomach and intestines, without being taken up by the absorbents, the greater quantity, sharper, hotter and more acrid will the *myasma* be. These windy pains, which may be commonly observed to be greatest sometime after a full meal, or before an hysterical paroxysm, do not confine themselves to the *primæ viæ*; they occasion a *cardialgia*, which is a most exquisite pain in the pit, or superior orifice of the stomach, a weakness, trembling of the limbs, wandering pains, swelling of the hypochondres, &c. These symptoms arise from this acrimony being received by the absorbents, and by them car-

ried into the blood, and with it through the whole habit. These sudden startings are not owing to the flatus taking such sudden flights, as appears to the patient; but to the contraction of the nerves in divers places.

As soon as the working and contractions of the fibres have removed the obstruction, and dislodged the offending matter, in one part; then the fibres, in another part, perhaps, at a considerable distance, contract themselves; upon which the patient perceives the pain to cease in one place, and to arise in another, and is apt to think that the pain is locally removed.

Dr. Cheyne observes, that he never saw a person under severe and obstinate nervous complaints, but he always found at last, the stomach, spleen, liver, mesentery, or some great organ or gland of the lower belly obstructed, knotted, schirrous or spoiled, or perhaps all these together: or any habitual, grievous or great nervous disorder, ever happen to any person, who did not labour under some real glandular distemper, either *scrophulous* or *scorbutic*, original or acquired.

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The stomach is often, says he, the first and principal organ in fault; it may be naturally weak and thin; or worn out with luxury and debauch; its coats may be relaxed, soft and flabby, or its glands may be schirrous and knotted; from whence arise *imposthumes, cancers, gangrenes, &c.*

VIII.

Uneasy cravings, faintness, giddiness, painful spasms, nausea, vomitings, with many of the foregoing symptoms,

May arise from aliments improper in their quality as well as quantity. The most wholesome food, in too great a quantity, oppresses the stomach and bowels; and being improperly digested, becomes acrid, putrid, and generates much wind; whence the complaints already enumerated. On the contrary, the want of a due quantity of aliment, occasions faintness and wind; and, in time, so much weakens the stomach and bowels, as to render them unfit to receive or digest what is necessary for supporting the body. The quality of the food
may

may offend: thus high seasoned meats, strong sauces, &c. will not only gradually enervate the tone of the stomach, but pervert and destroy the natural feeling of its nerves, corrupt the blood, perhaps breed arthritic pains, and bring on a diseased state of the whole body. Besides, a watery and flatulent diet, by generating much wind, and not affording proper nourishment, will occasion many complaints, chiefly in those that are subject to such disorders; but will seldom give uneasiness to those whose stomachs and bowels are strong.

IX.

Want of appetite, nausea, cramps in the stomach, vomiting sometimes black or bloody coloured matter, cold sweats, low spirits, flatulence. Nervous atrophy or weakness and thinness of habit, tending to hectic heats, especially after meals, oppression, &c.

Are owing often to schirrous or other obstructions in the stomach, liver, intestines, spleen, pancreas, mesentery, uterus, ovaria, &c.

&c. which hinder the free and easy passage of the chyle into the lacteals. As the mesentery is the basin for the chyle, so when it is obstructed, the further preparation of the chyle and its course to the thoracic duct are interrupted. When the guts are scirrhus, the free play of their peristaltic motion is hindered; the excrements are impeded in their discharge; and the morbid, thin part, by their slow descent, is again absorbed and mixed with the blood. Obstructions in the stomach, hinder the digestion; in the liver and spleen, impede the secretion of the bile; and, by their weight, occasion a disagreeable sensation. Obstructions in the stomach and liver, are often the occasion of low spirits; so, on the other hand, melancholy or long continued grief, frequently give rise to hypochondriacal and hysterical complaints, and sometimes obstructions and schirruses in the viscera, mammæ, &c. From such a state of mind, not only disorders of the nerves, of the stomach, liver and other bowels; but also want of appetite and digestion, spasmodic contractions and irresolvable obstructions, and schirruses in the breast, which have often turned

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to a cancer. The dark brown or blackish coloured blood vomited up, commonly proceeds from a scirrhus stomach, with small ulcerations and chops; in which case we condemn the too common and fatal practice of giving strong and frequent emetics; the patient should drink nothing but hot water, or a decoction of camomile flowers to procure a puke. It may also arise from violent pains or cramps of the stomach, or from a suppression of the menstrual purgations or hæmorrhages.

Nothing produces more sudden or surprising changes in the body, than violent affections of the mind. Horrible and unexpected sights, great grief, terror, anger, &c. will throw a person into hysteric fits, convulsion, &c. Long and continued grief will weaken the tone of the stomach, destroy the appetite and digestion, occasion thirst, and impair the memory and judgment. Sudden fear will cause a paleness of countenance, universal debility and shaking, palpitations of the heart, anxiety at the breast, difficult breathing, looseness, vomiting, pale urine. Anger raises the pulse; quickens

quickens the circulation, and occasions a temporary fever, with great heat. Sometimes violent passions have thrown delicate women into a kind of *teanus* or catalepsy, when the patient becomes either wholly or in a great measure insensible, and remains exactly in the same posture; others have died of those passions.

X.

Want of appetite, sometimes an unnatural craving for food, a nausea, flatulence, gripes, looseness, weakness, fainting, lowness of spirits, sleepiness, sighing, convulsive motions, giddiness, inflations of the alimentary canal, hiccup, vomiting, dry cough, difficult breathing, irregular pulse, palpitations, &c.

All these symptoms, may arise from tough phlegm in the primæ viæ, or from worms, &c.

In the alimentary canal, there are small glands, which secrete a glutinous liquor, designed to defend the delicate nerves from the heat, cold, acrimony or attrition of the food;

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but when these secreting vessels have lost their tone, and are affected with an unnatural stimulus, not only the mucous glands, but also the exhaling arteries, throw out, in a greater quantity, a viscid fluid; which, by lying some time, acquires a greater degree of cohesion.

When much phlegm is collected in the stomach and intestines, their nerves are less sensible; the absorbent vessels are plaistered up and much obstructed: whence digestion is slowly and imperfectly performed; and the chyle is not sufficiently absorbed by the lacteal vessels; which occasions the above symptoms. Worms too in the primæ viæ, especially in children, by preventing the regular digestion of the food, and by biting and irritating the nerves, produce the same symptoms.

XI.

A nervous or spasmodic asthma.

Every difficulty of breathing, is called an asthma, whether it arises from tough phlegm,
ulcers,

ulcers, scirrhuses, or spasmodic contractions of the lungs; the last is, what is properly called the nervous asthma, and arises from obstructed perspiration and indigestion; whereby the steams and insensible perspiration are thrown back into the cavity of the body, and the lungs being naturally tender and very sensible, are affected with spasmodic contractions, by any acrid or noxious matter, whether arthritic, rheumatic, putrid, &c. A translation of the gout from the foot, will cause a nervous asthma; the discharge of a flatus, from indigestion, will give present ease; a full perspiration will do the same, and a sudden diminution of it will bring on spasmodic cholics, asthmas, &c.

XII.

A nervous cough.

A cough is called nervous, that does not proceed from any phlegm, obstruction, or other irritating cause in the lungs themselves; it is a tickling, dry, convulsive cough; which arises from wind, pressing upon the dia-

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phragm;

phragm ; which is thereby forced up upon the lungs. It may also arise from an acrimony in the blood ; from obstructed perspiration, especially of the feet or arm pits ; from worms ; from some fixed obstruction in the lungs ; or from too great a delicacy of those parts.

XIII.

The variation of the pulse, and palpitation of the heart.

These symptoms proceed from a great variety of causes, too tedious to mention here ; the general causes, however, are the different states of the fluids and solids, which I have already considered and largely insisted upon, in my new system of physic.

XIV.

Spitting or salivation.

This symptom proceeds from obstructed perspiration, and is commonly a critical discharge, or follows some excess in diet, and ought never to be stopt, but forwarded : if
it

it is exceeding plentiful with sickness, reaching, and head-ach, you may give a vomit, to promote the discharge, quicken the circulation, and promote the perspiration.

XV.

Periodical head-achs.

These affect all the head, the fore or back part, one side, or one particular part, perhaps not the size of a shilling: Sometimes the temples are affected, at other times only one eye. They generally observe regular paroxysms; the pain is often very acute, overcomes and sinks the patient very much; sometimes the eyes swell or sink, and generally lose their lustre; the patient looks as if he had watched too long, or drank too much. The cause of these head-achs is an uncommon sensibility in the nerves of the head; a weak and imperfect digestion; a foul stomach, and acrid matter generated thereby; obstructed perspiration; or to a rheumatic, gouty, or scorbutic humour, &c. and perhaps to all these causes put together.

XVI. *Sink-*

XVI.

Sinkings, lowness, sadness, fits of crying.

These symptoms arise from a great depression and relaxation of the nervous fibres, and the languid circulation of the animal æther; the optic nerves, and glandulæ lachrymales, which contain the lymph that form the tears, being relaxed, are unable to hinder them from being protruded into the eyes; and if they are much relaxed, and unable to contract, and continue some time in that state, there is a fistula lachrymalis formed, near the great canthus of the eye.

XVII.

Immoderate fits of laughing, &c.

Immoderate fits of laughing, upon trifling occasions, when perhaps the same cause would, a little after, hardly be able to raise one laugh, or move one muscle of the face into contraction, are always a sign of weak nerves, and may be truly called a paroxysm, or fit, which is an effort of the nerves, to disengage themselves entirely of
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all oppressive matter, which their weakness has occasioned ; they are put upon this, because the soul perceives some of the finer obstructions to give way, which raises a pleasing idea, and is discovered in laughing and good humour. But if the nerves are worsted in the conflict, and are unable to remove all the obstructions, they are left weaker than before ; and, accordingly, we see the laughing fit is succeeded by lowness, answering to the foreness, numbness, &c. that follow hysteric fits. So that nervous diseases, from their earliest beginnings, have their exacerbations. When the nerves are relaxed, they give an idea of sinking, or sadness, to the soul, and produce what we call lowness of spirits, fears, dejections, and horrors : But, in consumptions, the muscular, fleshy parts decay, and suffer first ; and that decay, coming on gradually, scarce gives the soul notice of it ; therefore the patient fancies himself in little danger.

C H A P. II.

● OF THE CURE OF NERVOUS DISEASES.

IN vain have we found out the causes of nervous diseases ! in vain have we enumerated their symptoms ! if we can find no method of curing them. The poor, harassed, tortured, and distracted patient, will give us little thanks, for all we have done, if we cannot say do so and so, and be cured : 'tis when the captive victim is set at liberty, that he rejoices. We shall now lay down the rules of practice, that the suffering patient may have cause to thank us for our trouble.

When I set out upon this subject, I proposed to endeavour to prove, that man is made up of two parts, *matter and spirit, or soul and body*, closely connected to each other : I also endeavoured to shew the nature and manner, in which that connection is kept up ; that the immaterial part
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has faculties, the free and regular exercise of which, depends on the laws of matter and motion, i. e. on the assistance of the corporeal organs, fitted or mechanized to an exact standard; that the immaterial part accompanies the material through all its changes; and that these changes arise in the corporeal organs from divers causes, &c.

Now I come to the method of restoring a constitution, labouring under any of the foregoing symptoms; and the certainty of doing this depends upon the certainty of the theory; but the certainty of the theory depends upon intuition, which is the most certain and infallible evidence, any matter is capable of; as I have already proved.

Having therefore carefully observed the external, visible, obvious, sensible qualities, we get a rational knowledge of the internal, irregular motions of the solids and fluids; which disconcert the body, and produce these qualities.

Therefore in order to cure a disease, we must endeavour to increase or lessen these

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motions,

motions, according as they are above or beneath the standard of health; which we do by intending or remitting the action of the solids and fluids, so that the defective qualities may prevail, and the abounding humours pass off, by some of the natural discharges: thus we accomplish a cure, which would always be the case, if we properly discharged our duty.

These nervous diseases would not be so difficult of cure, nor would the patient so often relapse, if there was a proper method observed, and all the intentions of cure properly attended to, and long enough continued. When we endeavour to thin or thicken the blood, we neglect at the same time to restore the solids, upon whose motions the well being of all the juices and secretions depend. When the blood and other juices are restored to a due consistence, if the languor remains on the solids, they will be unable to preserve the fluids from running into unnatural cohesions, upon which the complaint returns, and acts over again the same scene.

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When we say such a case is difficultly cured, the meaning or reason is, we are ignorant of the laws of nature, which produce these effects, and the causes that excite these symptoms; consequently the indications to be pursued, for the obtaining a successful cure, lie hidden from us. Many will be ready to deny this, by saying, that numberless diseases remain incurable; the medicines, curing a disease in one person, fail in another; nay, that the medicines fail of success in one person, upon a relapse. To this I answer, that in the nature of things, the same effects must necessarily arise from the same causes, acting in the same given circumstances; consequently, the same effects will always flow from the same administrations, acting in the same given circumstances. It would be confounding all the laws of nature and certainty, by which we judge of the truth of things, to say, that medicines, in their operations, are not consistent, steady and regular. To say that the same cause does not always produce the same effect, in the same given circumstances, is to deny experience,

matter of fact, and the testimony of all men of sense. Therefore, if the same applications, that cured a disease before, don't do the same upon a relapse, 'tis a sure indication, that the symptoms vary now from what they were before. Symptoms vary every moment, consequently, are not the same, upon a relapse, they were in the original disease.

In order therefore to be successful in curing diseases, we must (after knowing a set of proper remedies, and certain principles to ground their operations upon) have a criterion, by which we are enabled to judge of the particular constitution of the patient; when we are masters of these, we easily judge of the proper circumstances of application. Knowing therefore the particular constitution, at that time predominant in the patient's habit, which we know by intuition, from the external, visible, sensible qualities, which are different in every individual, even in the same disease, according to the age, sex, constitution, and time the disease has been already upon the habit, then we are able to judge of the proper doses

ses of medicines. Indeed, if the disease is so fast rivited on the habit, and the constitution so weak or impaired, as not to be able to bear the force, that is necessary to remove the offending matter ; then the disease is incurable, and death comes on sooner or later, in proportion to the quantity of offending matter, and weakness of the constitution.

Having therefore seen that the physician is inabled to act upon the most steady, certain, and undoubted principles ; we shall now consider what is to be done to obtain a cure in *nervous diseases*.

First then we are exactly to regulate the use of the non-naturals ; for in vain do we prescribe medicines, if the patient is not directed and willing to observe certain regulations, in relation to air, diet, and exercise. We should chuse a free open air, not incumbered with hills or woods ; a cool and dry air, brace and invigorate the whole body ; and hot, confined, and damp air, weakens and relaxes the habit. When the
stomach

stomach and bowels are weak, they should be well guarded against cold and damps, especially in winter; and there is no dress better and more necessary to keep up a due perspiration, than flannels worn next the skin.

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Constant exercise, every day that allows of it, either in walking, on horse-back, or in an open chaise, is of vast service; it should be as much as the strength will admit, without weakness, fatigue, or hurry; never weary yourself, nor raise a sweat; go no further, than you can return with as much spirit as you went out. Exercise strengthens the whole nervous system; assists digestion, (but retards it after a full meal; therefore after dinner sit a while) sanguification, and the distribution and secretion of all the animal fluids. By muscular motion, the blood and juices are kept in a due state of fluidity; their viscosity is broken and dissolved, and all obstructions either prevented or removed. The flesh brush is an excellent thing for strengthening the solids; as friction, either with the flesh brush, flannel, or coarse linen cloth, strengthens the

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the body, promotes the circulation, and is particularly useful in weak bowels.

- 11 People of weak nerves are generally quick thinkers, from the delicacy of their sensitive organs, which are therefore more liable to be fatigued and relaxed with exercise, than those of a coarser make; whence we see the necessity of keeping the mind easy, quiet, and chearful; since nothing hurts nervous people more, than fear, grief, and anxiety. Use therefore agreeable amusements, and a little slight, entertaining and diverting reading, that requires no thought; for all study is pernicious and hurtful. Conversation should be agreeable, trifling, and easy, without dispute or contradiction; amusements be innocent, various, and not expensive; otherwise, upon reflection the money laid out would do more hurt, than the amusements could recompence. In a word, all thought and care must be laid aside; and rationality must give place, for a while, to a way of life, which BATH gives a pattern of.

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" I cannot but highly approve of a practice there, of having music, while the patients drink the water; which has a very great and good effect upon the motion of the finer animal fibres. Music has been allowed, in all ages of the world, to have a noble power in raising the dejected ideas of the soul. Those that have the most delicate constitutions, are most sensible of its good effects: it opens the obstructions of the finest vessels; assuages the passions, and at the same time communicates a pleasure to the soul, and makes its ideas chearful, gay, and lively; by the oscillatory motion of the air, vibrating against the timpanum of the ear, there is such an impulsive motion given to the finest fibres of the brain (upon which the soul more immediately displays its faculties) as to enable them to bring regular impulses to the sensorium.

But though music restores the tone of the finest fibres of the brain; yet the inferior organs demand coarser treatment, to restore them to the standard of health.

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4 We must abridge the quantity and quality of our food, which ought to be nourishing, easy of digestion, and suited to the stomach of the patient. Fat meats, and heavy sauces, are hurtful; and all excess is to be avoided. The patient ought never to eat more than the stomach can easily digest: eat therefore little at a time, but often, of innocent, plain, and simple meat; for every time the stomach is over-loaded, the strength is impaired, and its nerves are disordered.

11 Above all things, heavy suppers ought to be avoided; since the stomach is much more apt to be oppressed with the same quantity of food, in an horizontal position, than in an erect posture; and since the digestion goes on slower in time of sleep than when awake, as the vessels are then much relaxed.

It is a great blessing, that loathing and inappetency, in some degree, attend all disorders; which prevent many people from infallibly and quickly ruining themselves

without resource. Those who have only a few transient symptoms, and are but in the first stage of nervous diseases, should live with a due degree of temperance, suited to their constitution; and abate a little of the quantity of their food, while they are more immediately under the symptoms. Indeed, if the disorder is deep, and hath continued so long as to produce more violent symptoms, then there is a necessity to be still more careful.

Drink small beer, soft fine ale, or wine and water; but never use water alone. Wine in excess enfeebles the body, and impairs the faculties of the soul; but a few glasses of wine, in time of eating, assist digestion. A glass of wine, before dinner, on an empty stomach, and when one is languid, feeble, or faint, is of great service. Wine, in general, is preferable to malt liquor; the best wine is rhenish, mountain, or small French wine. When the stomach and bowels are troubled with acidity, water mixed with rum or brandy, is preferable to wine, or malt liquor. That too common
drink

drink *Tea*, is very hurtful, both to the stomach and nerves, especially if drank hot, with little bread : I would therefore recommend, not the difuse, but the more moderate use of *tea* : it were well, if something else was joined with it in the morning.

Having now laid down the necessary preliminaries, I shall next mention the medicines, and form of administration.

We should never bleed, unless we have manifest indications, such as convulsive coughs, sharp acute pains ; and, in sanguine, bilious constitutions, where there is a plethora, &c. but never exceed eight or ten ounces ; for bleeding weakens and relaxes the contractile force of the fibres, and impairs the motion of the blood and animal æther.

Vomiting is of wonderful use, when the viscera are sound, and no schirrous knots formed in the vessels ; it discharges the choler and viscid phlegm ; and, from the

advantageous situation of the stomach, gives a great turn to several chronical diseases, situated in the lower parts of the body : By its action, and the force of straining, it opens the obstructions in the most remote parts ; it shakes the habit, and pumps, from the most extreme parts and inmost recesses of the body, those humours which cannot be reached any other way ; and frees the greater organs of their obstruc-tions and morbid matter.

Vomits enable us to give the most quick and effectual relief to violent paroxysms, and very greatly to mitigate their symptoms ; till, by the use of proper medicines, the disease quite disappears. As emetics act by their stimulus, so they raise the pulse, and promote a diaphoresis ; and are of great use in languid cases. Therefore we are not only to use them in the primary preparations, before we enter upon the regular course ; but at any other time, when the symptoms indicate, or the violence of the paroxysms require a mitigation. Phlegm and bile are most effectually evacuated by
squills ;

squills; and nothing proves a better diaphoretic than an antimonial emetic. For young and weak constitutions, and where there are schirruses formed, warm water, decoctions of camomile flowers, or a few grains of *squills*, will prove sufficiently strong; and these are not to be often repeated. But if the constitution is strong, and the viscera sound, you may often give antimonials with great success; they are the best which mildly operate both ways: the same night, at bed-time, always give the camphorated julep, *vin. antimon.* with some simple water, and *syr. e mecon.*; or *theriac. androm. ipecacoan. gr. 3.*; or *emetic tartar*, gr. $\frac{1}{2}$ to 1, &c.

I always begin the course with a gentle emetic, which operates both ways; unless there be indications to forbid vomiting, as great weakness, small veins, strait chest, long neck, bilious constitution, &c. and then I clear the *primæ viæ* by a purgative.

If the constitution is hot, dry, and bilious, the purge ought to be gentle, cooling,
ing,

ing, and relaxing, as *Epsom* and *Glauber's salt*, *cream of tartar*, *cassia*, *manna*, *sena*, &c. to alluage the heat, check the hurry and motion of the blood, and evacuate the bile. As the bile is troublesome in all nervous and lax habits, I take care, through the whole course, to evacuate it, whenever it begins to abound ; for if you keep the body free of bile, you greatly hasten the cure ; and nothing discharges the bile more effectually, and with greater ease to the patient, than *infusion of sena and tartar emetic*, gr. i.

In a cold, phlegmatic constitution, where the contractions are weak, and the fluids languid in their motions, I give *tinctura sacra*, *elix. proprietatis extract. rudij.* &c. In this case, we are always to omit bleeding, but a vomit is of service.

If there is a great stupor, and heaviness of the head, which the vomit, when repeated, does not remove, then we must bleed in the foot ; cup, or scarify the neck or shoulders ; or apply leeches to the temples ;

ples ; bathe the feet constantly every night, and apply cataplasms to the soles of the feet.

Fomentations and a warm bath to the feet, says Dr. Whytt, are particularly useful in fevers, where the brain and nervous system are much irritated : in cases where the eyes are inflamed, they will answer better, if the patient has been bled in the temples with leeches, before their application. When the sick cannot bear the pediluvium in an erect posture, he may have his legs put over the side of the bed, so as to be immersed in the warm water. I shall only add, says the learned doctor, that I have found the warm *simicupium* or *pediluvium* the best remedy for those convulsions, which sometimes precede the eruption of the small-pox : and for the general tremor of the whole body, which often happens towards the end of the disease, when the pustules are of a very bad kind.

When the head is affected, nothing gives greater relief than blistering the back part of it, and having a perpetual blister to the nape of the neck, or an issue in the shoulder ; indeed blisters are of wonderful service in all
nervous

nervous cases, whether the head is much affected or not; the use of them sometimes cannot be dispensed with.

If there is a suppression of any natural discharge, we must by all means endeavour to bring a return. When the *menfes* are obstructed, we must promote their return, and till that is done, the most troublesome symptoms are to be palliated. There are few cases in which we are oftener disappointed, than in bringing back the monthly evacuations, after they have been long suppressed; and the medicines proper in one case, prove often ineffectual, sometimes hurtful, in another. When the want of blood, is the cause that the *menfes* do not flow; the best remedies are the bark, bitters and steel, with a nourishing diet and exercise; when the patient has by this means got blood, it should be determined to the uterus, by frequent doses of *tinctura sacra*, *elix. proprietatis*, *pil. gummos.* and by bathing the feet and sitting over the water. If a *pelthora* prevents the *menfes*, then bleed in the foot; the pediluvium and a gentle purge will prove effectual. If the thickness and viscosity of
the

the blood, is the cause of the obstruction; then frequent vomits, the *pilulæ mercuriales*, laxatives and gentle purges with *calomel* will answer. If the suppression of the menses, is owing to spasmodic contractions of the uterine vessels, then the *pediluvium*, *fomentations*, *oily draughts*, *pills of aloes*, *asa-fætida*, *extract of black hellebore and saffron*. *pul. ari. c.*, *elix. proprietatis*, *tinct. sacra* *pil. gummos.* *glysters of warm water*, with *laudanum*. Dr. Whytt says, that he used, with success, the following remedies, in cases where the menses were less copious than usual.

℞ Aloes socotorin. as. foetid. extr. hellebor. nigr. sal. mart. croci angel. āā ʒi elix. proprietat. q. s. ut pil. gr. 4 quarum capiat 5 vel 6 alteris noctibus.

℞ Rad. gentian. calam. aromat. āā ʒi summit. centa. min. 36. flor. anthos ʒ2. m. f. materialia infundenda, pro hor. 6, in aq. bullient. ℥4. colatur. adde tinct. cort. peruvian. ʒ10 m. cape ʒ3. bis in die.

These medicines are to be used two or three months, with the *pediluvium* at bed time.

At the decline of life, when the menses begin to cease, frequent small bleedings, gentle stomach purges, and issues are of use.

If the hæmorrhoidal flux is wanting in those who have been accustomed to it, we must endeavour to recall it with *fomentations, aloes, leeches applied to the anus, or by the use of the lancet.*

If old ulcers or sores have been too quickly dried up, then you must purge off the offending humours, or carry them off by means of issues and searons. If pimples and other eruptions on the face, &c. have been injudiciously repelled, the consequence often is violent head-achs, giddiness, sickness at the stomach, palpitations, &c. In such cases, if the morbid matter cannot be brought back to the face, it must be carried away by *perpetual blisters, issues, and by mercurial purges, antimonials, diaphoretics, &c.*

If there is an immoderate flow of the menses, it is restrained by *bleeding, tinct. rosar.*

rosar., terra japonic., alum., opium, elix. vitriol. &c. as,

℞ Lact. recent. bullient. ℥i alum. rup. pulverat. ʒi ad. ʒss m. f. coagulum et fero colato. adde sacch. alb. ʒi cape ʒ3 vel 4 in die.

vel

℞ Aq. menth. ʒ6—cinnamom. f. v. ʒ4 confect. japon. ʒ6 fyr. limon. ʒ2 m. cap. cochl. 2, 4^{ta} vel 6^{ta} quaque horâ.

Anodyne clysters are of great service in *floodings, &c.* The *fluor albus* has been cured by *sea bathing*, when other medicines have failed. The following is often attended with success.

℞ Cart. aurant. sevil. recent. integr. 7 coque ex aqu. fontan. ℥3 ad. 2 calaturæ adde sacchar. alb. ʒi elix. vitriol. gut. 60 cape chocl. 6, 3^{ta} quaque die.

If the excrements are hard, and the body costive, use *sal. prunel., crem. tartar., sal. glauber., ol. amygdal., ol. palmæ christi, &c. as,*

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R Ol. amygdal. dul. ʒ2fs. fyr. viol. ʒ2 flor. sulph. ʒ2
m. cap. cochl. 1, 4^{ta} quaque hora pro re nata.

vel

R Extract. cassiæ ʒfs. calomel ʒ1fs. ol. sem. anis. efs
gut. 3 crem. tartar ʒfs. m. f. elect. D. q. n. m. in septi-
manam superbib. feri lactis ʒfs.

vel

R Decoct. commun. pro enemat. ʒ10 mel. solutiv. ʒ2
elect. lenat. ʒ1fs. sal. gem. ʒ3 m. f. enema.

As the patient, under nervous diseases, is
always affected with wakefulness, I take
care to secure the tranquillity of the sleep, by
theriac. andromac., tinct. thebaic., elect. e scor-
dio, &c. with cordials and diaphoretics, as,

R Camphor. gr. 8 tartar. emetic. gr. 1. elect. e scordio
ʒ1 m. ut f. bolus.

vel

R Pulv. ipecacoan. gr. 3 sal. succin. gr. 4. theriac. an-
drom. ʒfs. m. f. bolus.

I very often give eight or ten grains of
the *soap* pills with a few grains of *camphor*,
or the following draught.

R Aq. puleg. simp.—Castor. āā ʒfs. sp. lavendul. c. ʒi
fyr. e meconio ʒ1 m. f. haustus. cap. omni nocte hora
som.

vel

vel

℞ Extract. thebaic. gr.iss theriac. androm. ʒi m. f. bolus cap. hora fom. super.

vel

℞ Aq. cinnamom. simp. ʒ2 aq. cinnamom. spt. ʒi extract. croci gr.3 confect. alkerm ʒi m. ut f. julep.

Or

℞ Pulv. occul. ʒ c. ʒi croci pulv. sal. fuccin. āā gr.3 fyr. e meconio q. s. bolus superbit.

℞ Aq. menth. vulg. ʒ2ss. fyr. croci ʒ3 laud. liquid. qnt.20 m. f. haustus.

No medicine is of greater use, as a palliative in all stages of nervous diseases than *opium*; it eases pain, and gives sudden relief, and must be run to on all pressing occasions. Sometimes 'tis impossible to procure ease without it; it is of wonderful use in spasms, convulsions of the muscles, and in all acute pains; procures rest, and makes the nights comfortable; and is of particular service in too great a delicacy, and sensibility of the nerves; it relaxes the solids and fibres of the nerves; retards the motion of the juices; slackens the secretions, and brings a languor on all the organs; as we see in giving it unskilfully, in gross corpulent habits, in humoral

moral asthmas, coughs, &c. When given in too large quantities, it lessens the sensibility of the nerves, the strength of the body, and the faculties of the mind : sometimes it brings on a faintness and languor ; startings of the tendons, sickness, vomiting, cramps, itching over all the body, redness of the eyes, horrors, raving and madness. The continued use of opium seldom fails to bring on costiveness, and loses its virtue and efficacy in unskilful hands ; it thickens the juices to such a degree, as to render it impossible, or at least very difficult to make a cure ; locks up the humours on the bronchial glands, and thereby chokes the patient, before medicines have time to give relief. I know it has been, and seems to be still by some supposed, that opium raises and accelerates the pulse, but they are led into this mistake, from its relaxing the solids, whereby they better perceive the pulse. The necessity of opiates appears most conspicuous, in sharp cholic pains, want of sleep, convulsive tremors, &c.

Thus far we have pursued the curative indications that serve to clear the first passages

passages, and give immediate relief by palliating the disease; and, we have also laid down some practical observations and necessary preliminaries; which, if duly attended to, will give the physician the satisfaction of seeing his after prescriptions answer his expectations; and the patient will likewise find himself comforted, and in some degree restored to his former health. When a physician, therefore, has gone through so much of his work, he should then stop, look about him, first to the right hand, and then to the left; and carefully observe all the symptoms; the degrees of the disease, and the advances it has made; if he finds it only beginning, his task will be attended with less difficulty.

The indications of cure, will be different, in different habits, according to the causes that brought on the disease, the part of the body where it is seated, and the advances it has made.

The general causes of all nervous diseases, are a natural delicacy and too great a sensibility of the nerves; a natural, or acquired
laxity

laxity of the solids in general, and of the stomach in particular; obstructions and obstructed perspiration; or morbid humours, lodged in the habit, through the laxity of the fibres and languidness of the secretory vessels.

These being the causes, from which all nervous diseases arise; we are necessarily led to three indications of cure, which may be properly enough blended and mixed together.

1st. The first intention is to restore the tone and elasticity of the solids, and to corroborate and strengthen the whole system; for as nature is very much sunk, she must be assisted, in bringing the several organs to their regular standard of action; and as the stomach is the first bowel, that suffers, and by its suffering, gives rise to most of the succeeding symptoms; so, great care must always be paid to it, to restore it to its due tone: we must also suspend and lessen, for a time, the too great sensibility of the nerves. And

2^{dly}.

2dly. We must resolve the obstructions, and give vent to the putrid and stagnant juices; and thereby make the circulation full and free, the perspiration current, and the secretions in their proper proportions. If these two intentions have been sufficiently and successfully pursued, there will remain little occasion for the last, which is,

3dly. To scour and cleanse the internal sides of the vessels of all putrid, morbid matter; to sheath, blunt, and destroy all sharpness and acrimony, lodged in the habit; to make the juices soft, sweet and balsamic; and to restore the blood to its due thinness and fluidity.

Among the chief remedies, to answer the first intention of cure, are those of the strengthening and astringent kind; which contract, corrugate and give a firmness to the weak and relaxed solids, fibres and nerves. Of this tribe, are all *bitters, aromatics, chalybeates, subacids, cold bath, &c.* As *cort. peruvian., chalybs, rad. gentianæ, summitates centaurij minoris, cortex aurantiorum,*
E e
zedoaria,

zedoaria, cinnamom, cortex winterian., flores chamæmeli, summitates absinthij, elixir vitriol acidum. Waters of Bath, Spa, Pyrmont, Tunbridge, Llandryndod, &c.

BITTERS may be exhibited in vinous or aqueous infusions; or brandy may be used as a menstruum: the dose must be adapted to the constitution of the patient; and if it proves too heating, it may be weakened with some drops of the *elixir of vitriol*, or *juice of lemons*.

There is not a more wonderful strengthener of the solids, in all the materia medica, than the BARK; nothing more promotes gouty humours towards the extremities; it strengthens the solids; and will itself often give a fit, when nothing else can; if the pediluvium is used, and warm things are applied to the feet, the bark rarely fails to bring a fit; and after a severe fit, there is nothing more effectual to recover the appetite, and strengthen the spirits. It may be given in substance, decoction, or infusion. In substance it often disagrees with delicate constitutions, occasioning

sioning gripes, purging and sickness; but an infusion or decoction of it, in water, with a cordial aromatic, does not so often disagree; and if infused in brandy, it agrees with most constitutions. Dr. Whytt, recommends a glass of red wine to be taken after each dose of it, and says, that the gripes and purging, may be prevented, by adding *confectio japonica* to it for a few days.

Although the bark is preferable, as a strengthener, to any of the bitters, yet it does not wholly supercede their use; they agree very well, when joined together; as

℞ Cort. peruvian. ʒ ss. flor. chamœmel. m. 1, coccinel. ʒ ss. coque. in aqu. font. ℥ 1 ss. ad. ʒ 12 ss cola; cui adde vin. chalyb. ʒ 2 ss. spt. lavend. c. ʒ 6 cujus cap. ʒ 2 ss.

vel

℞ Conserv. fol. rutæ, conserv. fol. roris. marin. āā ʒ 1 cort. peruvian. ʒ 6. cort. winter. ʒ 3. syr. caryphyl. rub. q. s. ut f. elect. cap. q. n. jugland, 6^{ta} quaque hora.

vel

℞ Cort. peruvian. pulv. ʒ 4 rad. gentian. cort. aurant. āā ʒ 1 ss. misce, infunde in spir. vin. gall. ℥ 4 in B. A. per dies 6 cola. D. cochl. 1. in aqu. commun. cochl. 4

E e 2

vel

vel 5. cum. elix. vitriol. gut. 20 vel 30, si tibi. placeat, hora anta jentaculum & hora 6^{ta} vesper.

Dr. Whytt says, that an ounce or more of *spt. lavind. comp.* added to each pound of this tincture, improves its tastes, and makes it fit better on the stomach.

Next to the bark is STEEL, all its preparations; and chalybeate waters. There are few medecines that so remarkably strengthen the stomach, bowels, and whole habit as iron doth. With weak and young persons, and in slight cases, liquid steel does well; as vin. chalyb, tinct. martis in sp. falis, sal. martis.

Those who are stronger and older, require steel rust joined with *aromatics*, *bitters* and the *bark*; where these do not relieve, the case is either very bad, or the patient has not been properly prepared. But in administering chalybeates, we should be careful not to force nature to over-act its part; sometimes the stagnant juices are thrown upon the thighs and legs; in which case they swell very much; when that happens,
you

you ought to give a gentle purge or vomit ; but the last is not rashly to be administered, lest we bring the humours again into the habit. Let the legs and thighs be kept warm with flannel, wetting them now and then with camphorated spirit of wine, &c. then let the patient drink chalybeate waters ; and if much reduced, and of a bilious constitution, he ought to drink asses milk, with testaceous powders, for a month, then Bath waters. If the constitution is highly scorbutic, Tunbridge, Islington, Hampstead, or Llandryndod waters are the best.

The medicines I successfully used in the first intention, were,

℞ Tinct. mart. ʒi in aquæ cyatho sumend.

vel

℞ Vin chalybeat. cochl. i. ter in die.

vel

℞ Sal. mart. extract. cort. peruvian. āā p. 8. f. pil. D. gr. 10. ter quaterve in die.

vel

℞ Sal. mart. ʒ2 N. M. Zingib. āā ʒ4 ol. cinnamom. qnt. 5 conserv. flav. cort. aurant. ʒi fyr. balsam. q. s. ut f. elect. D. q. n. m.

vel

vel

℞ Chalyb cum fulphr. p. 32 N. M. conserv. absinth.
rom. āā ʒ i Z. Z. ʒ i ol. cinnamom. qnt. 12 fyr. e spin.
cerv. q. f. f. elect. D. q. m. n. ter in die.

vel

℞ Extract. cort. peruvian. gr. 12 sal. mart. gr. 8 ol.
cinnamom. qnt. 1 facchar. ʒ ss m.

vel

℞ Spec. aromatic. extract. gentian. āā ʒ i ss. extr.
cort. peruv. gr. 15. sal. mart. ʒ ss. bals. peruvian. q. s. ut
f. pil. ʒ i = 10 D. 2. ter in die.

The *elixir* of *vitriol*, taken twice a day
in spring water, excellently strengthens the
stomach, and restores a decayed appetite.

℞ Elix. vitriol. acid. qnt. 30 in aquæ cyatho.

vel

℞ Spt. vitriol. ten. qnt. 20 in aq. cyatho.

vel

℞ Elix. vitriol. qnt. 12. ter in die in haust. vin. alb.
mont.

But a long course of chalybeate waters,
is the most effectual of any ; as Spa, Pyr-
mont,

mont, Tunbridge, or Llandryndod, in hot weather ; and Bath, in temperate and cold weather. If the stomach is foul, these waters will occasion head-achs, sickness, giddiness, mists, or dimness before the eyes ; therefore we should cleanse the *primæ viæ*, before we enter upon a course of chalybeate water : When the *primæ viæ* are pretty clear, then we may join *volatiles*, *aromatics*, and bitters with the waters.

But of all things that I have ever yet made use of, the cold bath is the greatest strengthener of the nerves ; it removes glandular obstructions ; raises the spirits ; and vivifies and strengthens the whole man ; for children, delicate constitutions, and women liable to miscarriages, or troublesome floodings, nothing can be better. Much might be said in praise of cold bathing, but as I have largely insisted upon its virtues in my *New System of Physic*, I shall here only observe, that where the stomach, liver, or other viscera are unsound, the cold bath is improper.

The

The second part of the first intention of cure, viz. to render the nerves less sensible of irritation, and thereby lessen the sense of pain, to stop tremors, convulsions, spasms, &c. is done by means of *opium*, *camphor*, *musk*, *bellebor*, and the *fætid gums*.

The virtues of *opium* I have already mentioned. The nature and virtue of camphor, musk, &c. are fully taken notice of in my *New System of Physic*, to which I refer the reader ; shall here only observe, that *camphor* is an excellent antispasmodic and antiseptic ; opens obstructions ; wonderfully promotes perspiration ; procures sleep and quiets deliriums, and has so extraordinary virtues in all nervous cases, that, after the preparatory course is ended, I always give camphor along with the bark ; or the camphorated julep by itself, to which I sometimes add *vin. antimon.* every night, after the pediluvium ; by which means perspiration is kept up, and the morbid matter is thrown out of the habit by the skin ; an outlet which nature chuses most to make use of ; *camphor*, and *antimony*, are the two
best

best medicines in the *Materia Medica* for promoting a diaphoresis; and indeed to answer any intention, nothing ever came, or ever will come up to antimony; which will, in the hands of a skilful physician, do wonders. Next to these I have found the best effects from MUSK, which may be given where opium is improper, and castor too hot; it seldom or ever disagrees, if given in sufficiently large doses: it is chiefly useful in the *subfultus tendinum* in fevers, furor uteri, spasms, hiccup, cramp in the stomach, chin-cough, and spasmodic asthma. I have tried castor several times, but never experienced any good effects from it.

Asafœtida is the strongest of all the fœtid gums; it quiets anxiety and oppression; procures rest, and all the other benefits of opium, with none of its bad effects; it pervades the whole habit; penetrates the smallest vessels; promotes perspiration; and, when other proper medicines are joined with it, will help to forward a lasting cure: joined with volatile salts, it procures rest; at-

F f

tenuates

tenuates viscid juices ; and is good in flatulencies, spasms, &c.

But it is to be remarked, that opium and the foetid gums are not designed to bring about a radical cure : they are only to be looked upon as palliatives for lessening or removing the present pain.

The forms that I commonly used as palliatives, were,

℞ Camphor. gr. 12 extract. thebaic. gr. 1 syr. e. cort. aurant. q. s. f. bolus.

vel

℞ Masch. gr. 12 sal. vol. c. c. gr. 10 rad. serpentariae gr. 15 conf. alkermes. q. s. ut f. bolus.

vel

℞ Pil. sapon. gr. 8. mithridat. q. s. ut f. bolus.

vel

℞ Antimon. diaphor. 3 i croci. camphor. sal. succinc. ʒā gr. 10 elect. e scordio q. s. ut f. pil. D. No 4 hora som.

vel

℞ Aq. alexeter. ʒ 4 spt. mendereri fs. sal. c. c. gr. 3 sacchar. alb. ʒ 3

vel

vel

℞ Aq. alexeter. simp. ℥ i ss. — spt. 33 fyr. caryophyl.
rub. 32 M.

vel

℞ Asæfoetid. 3 2 ol. anisi qnt. 30 f. pilulæ doses 31

vel

℞ Mosch. 32 gum arab. 31 simul trit, adde aqu.
rosar. 3 5 fyr. e. meconio 31 f. julep. dos. 31

vel

℞ Valerian. fylv. rad. pulv. 31 aq. cinnamom. simp.
31 M.

vel

℞ Jul. e camphor. 31 vin. antimon. gut. 30 aq. alex.
simp. 31 ss. M.

We now come to the second intention of cure, viz. to open the obstructions, and give vent to the putrid and stagnant juices; whereby the circulation becomes full and free; the perspiration current; and the secretions in their proper proportions.

But as I mentioned before, this intention may be pursued in conjunction with the other.

To answer our second intention, we are to make choice of those medicines, which are found to have these virtues, arising either from their activity, figure of parts, or force and momentum : nor are we to neglect, what experience shews us to be good, though we are at a loss to know by what means they operate ; we ought to steer the middle course between credulity and infidelity.

Among the chief and principal medicines are *antimony, mercury, camphor, bellebore, arum, valerian, cicuta, soap, lime water, the woods, acids, all fixed salts, all antiscorbutic plants, gum. ammon. galbanum, asafœtida, myrrh, all aromatics and volatile salts*, are diobstruents in nervous cases ; also *squills contrayerva, sulphur, the accidulæ, spirit of scurvy grass, spirit mendereri, &c.*

Of all diobstruents, ANTIMONY is the best, the use of which alone will elegantly, safely and effectually answer the second intention of cure, in nervous diseases ; I seldom suffer the patient to go to bed one
night

night without half a grain, or a grain of emetic tartar or camphor; when the bile is obstructed and offends, I give the infusion of senna, with gr. 1 of emetic tartar. When antimony is properly dosed, it occasions no tumults in the body; but passes easily and readily into the blood. ^{x a mistake} Its efficacy in chil- ^{It does not enter} dren's epileptic and convulsive fits is suffi- ^{the blood. Ark} ciently known.

MERCURY is not a proper medicine in nervous cases, and should never be exhibited alone, without some stimulating medicine joined with it: for it is indolent in itself, acts only by its gravity, and has no stimulating quality, as some have imagined. As the circulation is languid, and the solids lax, in all nervous cases; so the blood has not sufficient velocity to carry it through the small capillary vessels; but it often stops there, and forms new obstructions: and, by its sceptic quality, corrupts the juices, relaxes the solids; and will often produce nervous symptoms, where they were not before. Therefore, whoever is so great a friend to its use, as not to be inclined to neglect

neglect prescribing it, in nervous cases, ought to give it in small quantities, with some stimulating medicine. *Mercurius dulcis* is the best, safest, and most certain preparation of it we have, and will answer all the intentions, that mercury is capable of performing, except that of an emetic; in which case something else should be used. It often passes through the bowels, before it enters the habit; and at other times raises a scorbutic ptyalism; which sinks, and does irreparable mischief to the patient.

To prevent these bad effects of mercury, in the first case, it should be joined with some warm astringent medicine, as *mithridatum, elect. e scordio, cort. peruv.* In the second case, it should be given in smaller doses, with some preparation of antimony, as *sulphur. antimon. præcipitat.* Though I think the safest and best practice is, not to use it at all in nervous cases.

VALERIAN is the most active and volatile of all the vegetables, and seems to act chiefly by promoting perspiration, and a gentle diaphoresis, which is absolutely necessary

cessary in the cure of nervous diseases. The root powdered with cinnabar of antimony, and black hellebore, has admirable success. It is an excellent diluter when drunk as tea; joined with camphor, it opens the minutest obstructions, and cures agues; its unpleasant flavour is concealed by the addition of mace.

There are two sorts of *hellebore*; the *black* and *white*. They are both medicines of wonderful efficacy. The *black* is the mildest, and if used with judgment, is a wonderful alterative and sudorific, for attenuating viscid humours, and removing inveterate obstructions of the glands, &c. The *white* is possessed of equal, if not superior virtues; but is much stronger, therefore the dose must be proportionably smaller. I have likewise found considerable benefit from the *compound powder of arum*. in sluggish temperaments, where viscid phlegm and crude juices abound in the *primæ viæ*; it opens obstructions, both of the viscera and remoter glands, and is of service in exciting appetite.

The

The *CICUTA* is a valuable medicine, both internally and externally in all scrophulous tumours, indurated glands, and in scirrhus and œdematous swelling, in any part of the body. I seldom give it by itself, but join to it the bark, and some volatile aromatic simple, or camphor: and every second or third day, it is proper to prescribe a gentle cathartic, or a few grains of antimony, so as to give a puke, and two or three stools: I generally prescribe the sulphur of antimony, or emetic tartar. With this method of treatment, I have overcome most inveterate chronical diseases.

SOAP, triturated with resinous matters, is an excellent diobstruent medicine, for attenuating viscid juices, opening glandular obstructions, and scouring and deterging all the viscera; it has the advantage over mercury, and all stimulating acrid disobstruents, in this, that it may be used in most cases, without irritating and inflaming, and consequently without any hazard of changing a scirrhus swelling into a cancerous one: it dissolves the human calculus. The use of soap should be accompanied with the bark or bitters and some cordial stomachic water, with
a few

a few grains of camphor ; and as soap seems to remove obstructions by melting down the morbid indurated matter, and thereby fitting it to be reabsorbed into the mass ; therefore, after the use of soap for some time, the offending matter should be evacuated by diaphoretics and gentle emetics, repeated at proper intervals. Soap given in too large quantities, or too long continued, is hurtful to every constitution ; but especially to the nervous and scorbutic patient : and not a few, I believe, have hurt their constitutions with Mrs. *Steven's* medicine.

LIME WATER and a DECOCTION of the WOODS are excellent medicines ; they may be very properly joined together. Lime water is an admirable stomachic ; is very effectual in killing worms lodged there ; is antiseptic, and corrects immoderate acidities and concretions, the cause of many chronical diseases ; it prevents the production of phlegm in the stomach, after taking a gentle vomit of squills ; is of great service in the gout and rheumatism, and greatly mends the appetite ; does good in every morbid state, and foulness

of the blood ; and is particularly useful in all cold, corpulent and phlegmatic habits. It may be taken thrice a day, either alone, with milk, or with the decoction of the woods, which promotes its virtues. I have found very good effects from *decoct. lignorum* with *spt. cochleariæ* or *spt. mendereri*.

SQUILLS powerfully stimulate the solids, attenuate viscid juices, promote expectoration, urine and sweat ; and are a useful alterative. Certain acrid substances have been recommended, in dry, nervous and convulsive asthmas ; and squills in particular ; but it seems probable, that the asthma is not cured, but the particular effects of it are removed by the medicine.

In all asthmas, the free circulation of the blood through the pulmonary vessels, is impeded ; and hence, during every paroxysm, the lungs are in a kind of œdematous state : if this œdema remains after the fit is over, and becomes habitual ; it is either perpetually occasioning fresh ones ; or gives rise to a dropy of the breast.

Acrid

Acrid medicines, by removing the œdema, remove what is originally the effect of the asthma ; and in time the cause of its aggravation. For acrids, especially squills, are powerful expectorants and diobstruents ; they stimulate the vessels ; and dissolve tenacious juices : therefore are eminently serviceable in cold, leucophlegmatic habits, in stagnations of the fluids, and where the contractile power of the solids are weak : but in hot, bilious constitutions, or plethoric habits, and in inflammatory distempers, where there is already a degree of irritation, and where the juices are too thin and acrimonious, or the viscera unsound ; these stimulating medicines, as squills, garlic, &c. prove highly prejudicial, and never fail to aggravate the disease.

In the true spasmodic asthma, arising from too great a delicacy, and irritability of the lungs ; when there is no fixed obstruction in the lungs, nor any load of phlegm oppressing them ; the fits are best relieved by large bleeding, if the habit is sanguine

and full; if the habit is thin, then opium is of great service, as, elixir paregoricum.

vel.

℞ Syr. e. meconio ℥ i aqu. menth. vulg. ℥ i ss. f. haustus.

vel.

℞ Tinct. thebaic. qnt. 15 aq. cinnamon. simpl. ℥ i
syr. e. mecon. ℥ i f. haustus.

vel.

℞ Aq. menth.—fænic. āā ℥ 2 syr. caryophyl. ℥ i laudan. liquid. qn. 20 m. D. cochl. l. fingulis semehoris.

vel.

℞ Aqu. menth. ℥ i ss. laud. liquid. sp. volat. oleos. 2
qnt. 25 syr. commun. ℥ i m.

vel.

℞ Castor. ʒ i fal. c. c. gr. 5. tinct. thebaic. qnt. 20
sacharo infillat. m.

Any of the above medicines lessens or removes the difficulty of breathing, faintness, and frequent sighing, with which, women after child bearing, are sometimes afflicted. Also *asafætida*, *tincture of castor*, and *spirit of hartshorn* are often useful.

When the lungs are obstructed, or greatly loaded with phlegm, we ought not to give opiates ;

opiates ; till the tough, viscid matter is discharged by vomits, and even then they ought to be sparingly used. But bleeding is of service, in all cases, where there is a *plethora* or heat, except where the suppuration is begun. After bleeding, the medicines are more easily and properly conveyed into the blood, and have more freedom to act.

Some have recommended *pil. mercur. lax.* or *liquid quick-silver*, with a thin diet, as a sovereign remedy for dissolving the phlegm ; assisting expectoration, and rendering expiration and inspiration easy ; as I have never made trial of these medicines, can say nothing of them : but have found great effects from a large blister between the shoulders, and sometimes a perpetual blister. A gentle purge of *glauber salts*, *manna*, *tartar solub.* &c. lessens or carries off the fit ; after which, gentle emetics are of great use ; and draughts of *lac. ammon.* or *gum. ammoniac*, *sal. absinth.* and *assafætida* do wonders, if the bowels are not lax ; but if the bowels are weak, then apply blisters to the ancles, and one between the shoulders ; bathe the feet ;

feet; give small doses of vinegar of squills or syr. of squills with salt of vipers, and bals. of tolu; and strengthen the bowels with bitters given in some cordial water; or joined with small doses of the bark to camphor: this method will cure an asthma, even though the matter is gouty. If the lungs are much obstructed and loaded with phlegm; then we are to be cautious in using the bark, and call in the assistance of issues, setons, &c.

MYRRH, is an excellent medicine in asthmatic cases; it warms and strengthens the viscera; dissolves thick, tenacious juices; promotes a diaphoresis, and all the fluid secretions; is of great use in all languid cases, and in all diseases arising from a cold, mucous, sluggish indisposition of the humours, and where the thorax and lungs are oppressed with viscid phlegm.

Cherry, Rhenish wine, small French wine, or toast and water, are the best drink in asthmas; and a large piece of flannel, wore on the breast, does good. The fits
are

are best prevented from returning, by means of the bark, chalybeates, bitters; as *tinct. rhabarb. amara, elix. sacrum.* or two or three grains of aloes, an hour before dinner; also acids, as *elix. vitriol.* country air, gentle exercise, &c. give the patient great relief. For though, by repeated vomits, we clear the lungs and stomach of phlegm; yet, if we do not strengthen the solids and secretory vessels, more phlegm will be continually produced: wherefore, after evacuating the phlegm, we must have recourse to the bark, &c. I have tried what Dr. Whytt recommends, viz. to take an infusion of horse-radish, a little brandy, or powder of mustard with each draught of water, when a vomit of ipecacoana is taken; but in that case it produced a slight inflammation in the stomach.

When the asthma is owing to indolent obstructions; which have their seat in the secretory tubes of the glands; or in the glandular follicles or cellular membrane; then we must endeavour to resolve them by degrees, and in the mean time palliate the most troublesome symptoms. Complaints of want of appetite, indigestion, vomiting, flatulence,

flatulence, sickness, pains in the belly, which are obstinate and will not yield to medicines, but become worse, generally arise from some fixed obstruction; the best way to resolve obstinate obstructions, is by friction, baths, steams of hot vinegar, fomentation, with opodeldoch, camphorated spirit of wine, decoction of wormwood tops, camomæle flowers, hemlock tops, spirit of wine and vinegar; by plaisters of mercury, or of the cicuta with gum ammoniac; by gentle vomits and purges frequently repeated; by ripe fruit; by the use of the diobstruent medicines already mentioned; and especially by the external and internal use of the *cicuta*; the *pil. mercurial. laxant. sulph. antimon. præcipetat. tartar. solubilis. sal. polychrist. &c. &c.* are good medicines.

If the patient be of a full habit; and if there appears no indication for the contrary, we ought always to begin with bleeding.

Large discharges of LIMPID URINE, are prevented, by promoting a full and free perspiration; by warm cordials and diaphoretics;

tics ; by a strengthening plaister applied to the loin ; and by the bark, bitters, &c. &c.

LOWNESS and DISPIRITEDNESS, without pain or sickness, arise from the same cause, and may be cured by volatile spirits, aromatics, cordials, diaphoretics, and whatever stimulates the solids, to forward a brisk circulation and perspiration. The best medicines, in this case, are chalybeates, the bark, Bath water in temperate and cold weather, and Spaw, Pyrmont, and Tunbridge, in hot weather. If none of these can be had ; then use chalyb. rub. præp. spec. aromatic. &c. and wash them down with an agreeable bitter, appropriated to the patient's constitution and strength, as elix. vitriol. acid., elix. vitriol. dul., tinct. martis., elix. proprietates, &c. in some cordial or common water. When low spirits are owing to a weak state of the nerves of the stomach and bowels ; then we must add to the foregoing medicines, gentle exercise. When they arise from hypochondriac obstructions, or foulness of the primæ viæ ; then use stomach

H h

purges,

purges, as aloes, pil. stomachicæ, Harragate water, tartar solub.

SPITTING and SALIVATION, are cured by a gentle vomit, or a stomach purge of rhubarb and aloes, or pilulæ stomachicæ; then give astringent bitters, as infusion of the bark with aromatics, or chalybeates with aromatics.

In FLATULENCIES we are to procure speedy relief, by expelling the wind, and then strengthening the viscera. The first intention is answered by carminatives, opium, tincture of castor, pepper-mint-water, spt. nitri dulcis, asafætida; and by the medicines most proper for strengthening the stomach, already mentioned; applying, at the same time, a strengthening plaister to the stomach. If the windy complaints are attended with costiveness, then Dr. W. recommends the following,

℞ As. foetid. ʒ 2 aloes. socotrin. sal. mart. rad. zingib.
 āā ʒ 1 elix. proprietat. q. s. ut. f. pil. gr. 4

When the body is too open, then you may
 give

℞ Rhabarbar.

℞ Rabarbar. gr. 10 confect. japonic. ʒ iſs m. ut. f. bolus

*Or gentle vomits, ſmall doſes of ipecacoan-
ba, carminatives, &c.*

An hyſteric cholic, ariſing from gouty matter, ſometimes ends in a lameneſs of the feet or hands; which is cured by vomits; by the bark and bitters before dinner; and by the bark with rhubarb at night; rubbing the hands and feet with opodeldoch, or camphorated ſpirits: and an habitual diarrhæa is cured by the ſame medicines, and toaſted rhubarb, teſtacious powders, and diacodium.

BILIOUS and PORACIOUS VOMITING, is cured by a gentle antimonial emetic; by an infuſion of ſena, with emetic tartar; or by bark and rhubarb, with other bitters and cordials, chalybeate waters, volatiles and fœtids, and a regulation of diet.

PERIODICAL HEAD-ACHS, are cured by emetics, when the ſtomach is loaded; and by the pil. gummos. cum aloe, and a draught of ſack whey or water gruel, with ſpt. c. c. vol. every night, till well; and afterwards re-

peating them about the paroxysms. If there is any acid in the stomach, the testaceous powders, magnesia alba, and lime water, will be found useful. In head-achs proceeding from a rheumatic or gouty humour; and likewise in all violent or fixed pains, in any part of the body, arising from the same cause, blisters applied to the part affected, issues, friction and pediluvium, are the proper remedies. Their violence may be lessened by fomenting the part with camphorated spt. of wine, compound spt. of lavender and opium; and by the internal use of opium, camphor, musk and valerian. Dr. W. says, the following draught lessens the pain, and seldom fails to raise a plentiful sweat:

R Laud. liquid. gut. 40 tinct. ipecacoan. qnt. 45 spt. mendereri. ʒss. aq. rosar. ʒi sacchar. alb. ʒ2 M.

If it is occasioned by a suppression of the menses, then bleeding, and other proper methods are to be used to obtain a return.

The application of leeches to the temples, and cold water falling from a considerable

derable height upon the head, are of great service.

To answer the second intention of cure, we may use one or more of the following forms :

℞ Rad. hellebor. nig. gr.8 pulv. ari. c. gr.5 sal. succin. croci ā gr.6 m. ; in vin. alb. vel in aq. pulegij cyathotho fumend.

vel

℞ Tartar. emetic. gr.2 magn. alb. ʒss contere diu in mort. marm. ut f. pulv. subtiliss. D. gr.5 ad 12

vel

℞ Rad. valerian. ʒi castor. croci āā gr.5 as.foetid. gr.4 m. ut f. pulv.

vel

℞ Gum. ammon. sapon. dur. ā ʒi scill. pulver. ʒi conserv. flav. cort. aurant. ʒ4 fyr. Z. Z. q. s. ut f. elect.

vel

℞ Antimon. illot. ʒ3 optime lævigat. cum refin. guaiac. ʒ2 ol. e rad. sassaf. gut.6 conserv. rōf. rub. ʒ2 fyr. balsam. q. s. ut f. elect. superbib. Aq. calcis haust.

vel

℞ Extract. guaiac. gr.6 sal. c. c. gr.4 fyr. simp. q. s. ut f. bolus.

vel

vel

℞ Resin. guaiac. gr.4 mercur. dul. gr.2 ol. terebinth.
gut.1 confec cardiac. q. s. f. bol.

vel

℞ Pulv. ipecacoan. gr.4 spec. aromatic. gr.13 syr. e
cor. aur. q. s. f. bol.

vel

℞ Sulph. aurat. antimon. mercur. dulc. subl. āā 32
quam optime lævigentur supra marmor. gum ammon. 34
bals. peruv. q. s. ut f. pil. d. gr.8

vel

℞ Scill. rec. gum. ammon. sapon. dur. āā. p. æ. f. pil.
dos. 31

vel

℞ Extract. cicut. 31 pulv. folior. cicutæ q. s. ut f. pil.
D. gr.2 ad 31

vel

℞ Æthiop. mineral. 32 cerufs. antimon. 31 gum.
guaiac. 31 fs extract. gentian. q. s. ut f. pil. 31=10 qua-
rum dos. 3 superbib. decoct. lignorum D. 36

vel

℞ Pil. aromatic. gum. guaiac. fal. martis fal. absinth.
extract. gentian. āā 31 gum. ammon. in aceto scill. so-
lut. q. s. ut f. pil. 31=10 D. 5

vel

vel

℞ Argent. viv. extract. guaiac. dur. āā 3 i fs. ol. e cort. fassaf. gut. 20 terebinth. ven. q. s. ut f. pil. 40 D. 2 vel 3 superbib. aq. calcis, decoct. lig. p. æ.

vel

Mercur. dulc. gr. 10 antimon. illot. 3 i extract. guaiac. gr. 12 bals. peruv. q. s. ut f. pil. N. 12 dos. 1 ad 3 superbib. aq. calcis cum decoct. lig.

vel

℞ Tartar. emetic mercur. dulc. āā gr. 10 aloës gr. 15 extract. thebaic. gr. 5 bals. peruv. q. s. ut f. pil. N. 15 dos. 1 ad 2.

vel

℞ Mercur. dulc. gr. 10 camphor. 3 i fs. extract. guaiac. 3 i terbinth. venet. q. s. f. pil. N° 20 dos. 1 ad 6

vel

℞ Vin. antimon. gut. 40 aq. alexiter. 32 f. haust.

vel

℞ Gum. ammon. (in acet scillet. sol.) 32 oxym. simp. 31 aq. menth. vulg. simpl. 36 f. mixtura dos. cochl. 2 & sal. ammon. 31 feri lactis 152 pro polu commun.

vel

℞ Succ. cochleariæ suc. glycyrrhizæ āā 32 sal. tartar. 32 vin. canar. 152 M, D. 33

The

The outward applications are,

Fotus communis, pediluvium, fpt. vin. camphor., emplast. mercurial., emplast. com. cum gum., linament. fapon. emplas. vesicatorium.

℞ Sinap. sem. trit. farinæ āā p. æ. aci q. s. ut f. cataplasm. pedibus applicand.

vel

℞ Allij contus. farinæ āā p. æ. mellis q. s. ut f. cataplasm. pro pedibus.

℞ Cicut. fol. rec. M.2 coque ex aq. font. q. s. adde gum ammon. (in acet. sollut.) ʒss. ol. amygdal. ʒʒ f. cataplasm. &c.

We now come to the

3d INTENTION of cure, which is to scour and cleanse the internal sides of the vessels, of all putrid morbid matter, to sheath, blunt and destroy all acrimony, lodged in the habit; to make the juices soft, sweet and balsamic; and to restore the blood to its due thinness and fluidity; but this intention is, as I before observed, mostly superceded by the other two; for if the two first intentions

ons have been sufficiently and successfully pursued, there remains little occasion for the last ; which however should not be entirely neglected ; and as all the three intentions may, with great propriety, and indeed ought to be carried on together ; therefore to answer this last indication in particular, we should give gentle emetics or cathartics, at proper distances, during all the time of the course ; so that the morbid matter is no sooner unsettled, and an obstruction opened, than it is thrown out of the body, and not suffered to enter and circulate with the mass of blood, so as to have time to act as a sceptic upon it. If the juices are very acrid and sharp, we ought to prescribe some agglutinant and balsamic, at a time of the day, when the patient has no other medicine to take, as *decoct. pectoral.*, *emuls. commun.*

vel

℞ Ol. amygdal. ʒi gum. arabic. ʒi syr. balsam. ʒss.
diu tritis ad de aq. menth. vulg. simpl. ʒ8 f. mixtura.

vel

℞ Spermac. (vitel. ov. solut.) ʒ3 aq. cinnamom. simpl.
ʒ6 syr. balsam. ʒi f. mixtura dof. cochl. 2.

I i

vel

vel

R Aqu. hordeat 36 aqu. ros. 32 fyr. balsam. 36 m. f. julep. &c.

If the morbid matter be of the gouty or rheumatic kind, we must endeavour to throw it upon the extremities by the use of bitters, bark, steel, aromatics and cordials, which strengthen the viscera, whereby they are enabled to throw off the morbid matter. Issues and perpetual blisters are of great use in gouty, and rheumatic complaints; if the pain is fixed, as in the sciatica or chronic rheumatism, then apply a blister to the part affected; sometimes I have applied, with great success, three blisters, one immediately after another, to the same place; vomits too are no despicable remedy in the gout.

When the spungyness of the gums, a lassitude, lowness of spirits, or melancholy flatulence, frequent spitting, bad digestion, flying pains, and other symptoms, discover that the patient has a scorbutic taint in his blood; then we must endeavour to drive
the

the morbid humour towards the skin by vomits, warm stomachics, bitters, bark, sudorifics, mild alteratives, and purging mineral waters. Dr. W. recommends twelve grains of the *pilulæ æthiopicæ* every night, at bed time, and every other morning a dram, or a dram and a half of *polychrist salt*, dissolved in a pint of water; and, when the obstinacy of the case requires it, he orders the pills to be given morning and night. When the rash, or miliary eruption falls upon the internal parts, instead of being thrown out upon the skin, it generally occasions a great depression of spirits, anxiety and faintness, pale urine, watching, and sometimes raving and convulsions; if the patient is plethoric, we must bleed, bathe the feet, and give camphor, spt. mendereri, hartshorn, bitters, and put on blisters.

C H A P. III.

OF A NERVOUS FEVER.

AS strong, tense fibres, much dense blood, abounding with acrid salt, will stimulate the heart to more frequent and vehement contractions, and produce an inflammatory fever; so, on the contrary, lax, fibres, great evacuations, thin and poor blood, study, fatigue, foul air, imprudent use of mercury, immoderate use of venery, unwholesome food, rainy and foggy weather, long and great anxiety of mind, disagreeable news or cold, will occasion a small irregular and disturbed secretion of the animal æther, consequently low spirits. These causes also produce obstructions in the serous and lymphatic vessels; and the stagnant lymph grows more and more acrimonious, which brings on more or less of a fever, known by a quicker pulse; and nervous symptoms arise, which denominate the fever to be nervous; for those distempers only ought
to

to be called nervous, that are attended with a loose and relaxed state of the fibres, which are known from some one or more of the symptoms I have already mentioned : and those diseases are called hot or inflammatory, where the solids are tense and firm, the symptoms high, and the blood inflammatory. According to this distinction, it will be easy to determine the nature and constitution of a nervous fever.

The symptoms of such a fever are rigor or chilliness, which, though not strong and violent at first, yet is long and slow, and creeps on imperceptibly ; the heat afterwards is not intense, nor the head-ach and sickness great, but rather continued ; the pulse is neither so quick, strong and full as in an inflammatory fever, but small, oppressed and sometimes intermitting ; the sleep resembles a lethargic dozing, or dreaming, with startings ; the urine sometimes crude, sometimes pale, and in great quantity, without much sediment, at first ; in short the fever rather creeps on than attacks and surprizes ; and the whole exordium or first stage is so
slow

slow, that it is six, seven, or perhaps nine days before it comes to its state, by which any one may judge of the duration of the whole; for the sooner a fever comes to its state, the shorter is its duration, and danger; but in nervous fevers 'tis longer before assistance is called, means used, or the latent enemy discovered; therefore the danger is commonly very great. Before the fever comes to its state, the slight chillings are succeeded by sudden flushes of heat, inactivity, restlessness, dejection of spirits, dislike to all food, slight nausea, and reachings which bring up tough phlegm; go and come in the day, but are always worst at night.

These symptoms, are but slight, till the fever comes to its state; after that the head becomes more stupid and confused, and almost incapable of receiving impressions, with a slight delirium, and obtuse pain; the tongue is seldom dry or black, till towards the end, and sometimes not then, but is often covered with a thick brownish or white crust. The patient seldom complains of thirst, or asks for drink; but complains of an oppression at his breast, with

with a difficulty of breathing, and is troubled with a gulping or choaking : the countenance is pale, heavy, and sunk, the cheeks are often flushed, and the tip of the nose and ears cold and moist ; the head becomes more heavy and giddy ; the pulse rises, is quick and unequal, yet small and thready ; sometimes it flutters ; the urine now is sometimes limpid and much ; sometimes broken and in small quantity ; of a whitish colour, as if bran had been mixed with it ; but never has a full or gross lateritious sediment. From the 7th, 9th, or 15th, day the symptoms often grow worse and new ones come on, as noise in the ears, a load on the præcordia, anxiety and fainting upon the least motion, a delirium, which is seldom violent, but rather a confusion of thought and action, suddenly recollecting, muttering a little, and then falling into a dozing state, in a careless and unnatural posture of the body ; sometimes he is in a watching, comatose state, with staring eyes, or with their whites turned outwards ; and at other times he uses simple and childish gesticulations.

If

If the tongue, from being very dry, becomes moist about the state, or close of the disease; then you may expect a copious spitting, which is a good sign.

If the urine grows more pale and limpid; then you may expect a delirium, with convulsive tremors and *subfultus tendinum*. If difficulty of swallowing, gulping, and choaking in the throat come on, 'tis a very dangerous sign, especially if accompanied with any degree of singultus. Sometimes a profuse cold and clammy sweat comes on; at other times thin stools are discharged, which commonly takes off the delirium, tho' they are generally colliquative and weakening. The belly, though it was at first open, and tending to a diarrhæa, now generally becomes constipated and tumified, with flatulencies. The tip of the nose and ears have often an *ichor*; and sometimes an imposthume is formed in the ear.

The patient, who at first was very susceptible of the smallest noise, is now quite insensible to the loudest; and the delirium turns to a coma: if this deafness ends in
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an imposthume in the ears, it is a good symptom.

Now nature sinks apace, the extremities become cold, the nails pale and livid, the pulse is so exceeding weak, as scarce to be discovered, it trembles, flutters, and often intermits, the stools, urine, and tears run off involuntarily. If the parotids suppurate, or if a large eruption breaks out about the lips or nose, they are good signs; when tremblings and twitchings of the nerves and tendons come on, they are preludes to a general convulsion, and signs of a speedy dissolution; in one or all of these ways the patient is often carried off, after having languished from the 15th to the 20th, 30th, and sometimes to the 40th day.

Sometimes in this fever, they sleep as it were into the arms of death, and if a crisis happens, it is into a mere languor and insensibility, a confirmed *cachexy* with deep nervous symptoms, or settled melancholy, a palsy, some mortified limb, a violent and lasting

K k

diarrhæa,

diarrhæa ; and sometimes those of the more benign kind terminate in intermittents.

That all the humours of the body grow more and more corrosive, the longer they stagnate, is evident from many examples ; we see an hydropical swelling of the legs, tho' at first as cold as ice, becomes at last highly inflamed, and the humours at length so very acrid as to produce an erysipelas, ulcers, &c. which are often observed at the close of dropfies.

Now, seeing the seat of nervous fevers, seems to be in the serous lymphatic arteries ; it is no wonder they are not easily affected by medicines : and accordingly this fever is longer in forming and longer in being removed, than those of the inflammatory sort.

A nervous fever soon partakes of the nature of a putrid one, and for the most part ends in it : it has infinite degrees and variety, according to the general strength of the fibres, or the patient's time of life ; but those
I have

I have described are the most common and perhaps the worst symptoms

THE CURE OF A NERVOUS FEVER.

From what has been said it is pretty evident what will be the indications and best manner of treating a *nervous fever*. We must avoid great evacuations, especially bleeding; it is necessary however to cleanse the *primæ viæ* with a little rhubarb, manna, infusion of senna, with emetic tartar, &c. or with a gentle puke, as the symptoms indicate. If there is a *nausea*, load and sickness at the stomach, then a mild emetic is indicated, which may be repeated more than once, without danger. The fœces after the 3d or 4th day, ought to be brought away with glysters, a gentle internal laxative, or with a very gentle antimonial puke. If the bile offends, an infusion of senna with emetic tartar, gr. $\frac{1}{2}$ to 1. ought to be prescribed; then temperate cordial diaphoretic medicines, a diluting diet, and the judicious application of blisters, which never ought to be neglected, are indicated. If the pa-

tient is very wakeful, which is often the case; then we are forced to give a gentle opiate, mixed up with some cordial and diaphoretics. Opiates should, however, be used as sparingly as possible; and of all the diaphoretics, in the materia medica, none comes up to camphor in this case; and indeed in most other cases, where a diaphoresis is indicated. Blisters ought to be applied to the head, and the feet put into a bath. Barley water, thin chicken broth, jellies, sago, panada with juice of a lemon and a little rhenish wine, should be frequently given: but above all things, a gentle diaphoresis must be constantly kept up. If vast tremors, dejection of spirits, and subsultus tendinum come on, apply blisters to the legs and arms, and give a diaphoretic with musk, along with a saline draught as

℞ Sal. c. c. ʒ i ss. succ. lemon. ʒ ʒ aqu. alexet simpl.
 ʒ 2 M. peractâ effervescentia adde spt. lavend. c. syr.
 croci ā ʒ 2 m. ut f. haustus dos. repet. quinta vel sexta
 quaque hora.

A weak

A weak cordial with *vin. antimonial.* may be occasionally given.

If the anxiety about the præcordia is great, and the breathing laborious, we may look for pustular or miliary eruptions, which ought to be forwarded with soft easy cordials.

Towards the end of the fever, there are generally colliquative sweats or stools, which are very weakening; in that case we may add the free use of the bark, with rhubarb, to the above medicines: I do not mean that we should delay giving the bark, till towards the end of the fever, when the colliquative stools come on, but that then we may be more free in the use of it: for after the primæ viæ are cleared, we may begin with the use of the bark and camphor. I believe the cold bath would be found of service in this fever.

A gentle laxity of the bowels, or a plentiful salivation, with a gentle moisture upon the skin, are favourable symptoms, and it is only necessary to keep up the patient's
spirits,

spirits, and the vis vitæ with cordial and generous food.

Blisters should be early applied, and ought to be as extensive and universal as possible, though not too strong, nor applied all at once, but gradually.

If there are any indications for bleeding, we may venture upon it for once, yet it is not to be repeated, though the blood be never so fizy and rheumatic, because the vessels must be kept full, though not turgid, in order to keep up their tension in order to concoct the morbid matter. We must endeavour by all means, to open the obstructions, and to rouse the weak and languishing solids, into more frequent and hearty contractions, in order to bring the fluids into a brisker circulation.

As soon as the patient is able, he should use the cold bath, chalybeate waters, and gentle exercise.

C H A P. IV.

OF CONVULSIONS, SPASMS, NERVOUS
AND HYSTERIC FITS.

CONVULSIVE motions, spasms, hysteric fits and paroxysms arise immediately from something, that irritates the brain or nerves, or affects them with a disagreeable sensation.

This peccant, offending matter, may proceed from the blood, phlegm, acrid humours, obstruction of the menses, worms, wind, a plethora, anger, fear, acrid and putrid bile, myasma, obstructed perspiration, polypus, preternatural excrescence, some great bowel much obstructed, weakened, and perhaps spoiled, &c.

When convulsive motions attend the nervous system in women, they are called *hysteric*, or *nervous fits*; and in men, *epilepsy*. And as all nervous women are not seized
with

with hysteric fits ; neither do all splenetic and hypocondriacal men fall into epilepsies.

Nervous fits and paroxysms, arise from acrid matter applied to the nerves, which twitches, stimulates, wounds and puts them under the mechanical necessity of exerting those violent throws, cramps, contractions and spasms, and those other struggles and efforts, to resolve and disengage themselves of the offending matter ; and to restore themselves to their natural contractile powers.

For it is well known, that whatever pricks, stimulates, wounds or tears the solids, throws them into spasms, convulsions, and contractions, first and chiefly in the part affected ; but are afterwards, by means of the animal æther, and mechanism of the parts, communicated to all the parts of the body.

Therefore any sharp corroding vapour or steam, wherever placed, will stimulate and vellicate the small nervous fibrillæ, and occasion

caſion convulſions, ſpaſms, gripes or pains, firſt and chiefly in the part immediately affected, and then by ſympathy, or rather by a mechanical connection, in all the other parts of the body; and theſe convulſions continue, till the offending matter is, by ſuch action or motion, either removed or thrown out, or till the nerves are quite fatigued, relaxed, and overpowered.

Thus choler, wind, ſharp or porous juices, occaſion thoſe fits and convulſions, in the ſame manner, as gravel or ſtone, by ſtimulating the kidneys and urethra, raiſes thoſe reachings and vomitings, which attend nephritic caſes; or as the foetus, by its motion and preſſure, raiſes thoſe throws and convulſions, which bring it into the world.

The various and different kinds and degrees of convulſions, ariſe from the quantity of offending matter, the place where it is lodged, and the more or leſs irritability of the nerves.

Now the fits and paroxyſms of chronic diſeaſes, exactly answer to the convulſions

in nervous and hysteric fits. Both are exerted for the same reason, and to obtain the same ends; viz. to throw off the load of matter that oppresses the constitution, and to restore the fibres to their regular tone; which they would accomplish, if the vessels were all sound, and if the fibres were not left in a state of too great laxity. Immediately after the fit goes off, if the vessels were brought and kept to their due elasticity, the disease would certainly disappear; for the fluids would not again run into preternatural cohesions and contacts, and form obstructions; but when the solids are lax, the stomach, liver, spleen, intestines, womb, &c. are unable to throw off their contents; consequently, crudities are produced in the stomach; the bile stagnates and putrifies; the monthly purgations are interrupted, &c. which bring on convulsive motions, or hysteric fits, in order to throw off their oppressive load. These fits observe regular paroxysms; because there is some time before the offending matter accumulates such a quantity as to distend the coats of the vessels, and stimulate the solids into so violent contrac-

contractions. The paroxysms differ in different people, owing to the more or less sensibility of the nerves, and nature of the obstructed part or parts.

The paroxysms in agues, asthmas, &c. are the effects of nature to disburden the constitution of the load of matter, that forms these complaints; and as the heart is the main spring of action, in the fits of chronic diseases, so the brain and nerves are the chief actors in nervous fits; for the brain is to the nerves what the heart is to the blood; and as, in nervous fits, the obstructions lie in the organs that convey strength and motion; so there must be a great strength and motion used, to remove them; and as, in the fits of agues, the obstructions lie in the blood and grosser fluids, so there is proportionably less strength and motion needed to remove them: accordingly we see, that in nervous fits, the patient's body is more convulsed than in the fits of an ague: and as the blood's motion gives heat to the body, so there is a greater heat after the cold fit of an ague, which

we call the hot fit; than after a nervous fit.

Sometimes nervous fits are occasioned by a polypus in the heart, or great artery, or by some preternatural excrescence. Sharp humours in the stomach or bowels, from indigestion, often produce spasms and convulsions; which are only to be cured, by correcting or expelling the offending matter. In some constitutions, a plethora will produce convulsive motions, which are cured by bleeding. If the plethora arises from a suppression of the menses, then you should bleed in the foot, and endeavour to bring a return of the menses.

Nervous fits, or at least the symptoms attending them, widely differ in different constitutions: but when we have discovered the nature of the symptoms, we shall endeavour to assign the causes that support these symptoms; for these two principles, are as inseparable as cause and effect. There can be no disease without a cause, nor a cause without its symptoms or effects; for the

the same cause must necessarily produce the same effects.

Some, upon the first invasion of the hysteric paroxysm, faint away, and fall into a syncope or swooning; they involuntarily grasp their hands together; fix their teeth; stretch out the body; and lie still. We shall therefore call this the *STILL hysteric fit*.

By and by they give signs of recovery, and are almost choaked with wind; which discharges itself plentifully in rifts and belchings; then they weep, laugh, sigh, sob and cry by turns; till presently they fall away again in a faint: then head, hands and legs are strongly convulsed; tho' the trunk of the body has often little motion. These fits perhaps return five or six times without intermission, out of one into another, till at length they gradually revive, and return to their senses, by fetching a deep groan; which is a sure indication of the fits going off.

These fits commonly proceed from some very great passion, as grief, disappointment
in

in love, &c; they are the most dangerous of any in their consequences, and very difficult of cure. They indicate a defect of the circulation of the blood, in some principal organ ; and the fits are unable to remove the cause, at least but partially.

In some constitutions the paroxysm comes on with a fixed, intolerable pain ; which is sometimes drawn to a point, with an excruciating torture ; as if a sharp instrument was pushed into the skull ; it often darts from the head into the stomach, back, or bowels, and there occasions what is called the hysteric cholic ; which is attended with frequent reachings and vomitings of green poracious bile : by and by it shoots into the muscles, and produces an hysteric rheumatism ; and after afflicting the patient for days, weeks or months, it often terminates in the jaundice ; upon which the patient finds himself better. This we shall call the PAINFUL *hysteric fit*.

All the larger vessels, under nervous disorders, greatly suffer ; but the liver is the
greatest

greatest sufferer ; and detaches a vast quantity of bile into the intestines ; but if the peristaltic motion of the intestines is inverted ; the bile, finding the passage into the stomach freest and most open, rushes into it, and excites severe bilious vomitings. If the bilious ducts are stopt in the course of the disease ; then the hysteric paroxysm ends in the jaundice. When the solids are relaxed, and the secretions obstructed, then the perspirable matter, being thrown on the heart, is, by the force of its contractions, thrown upon the head, and obstructs the brain, and produces that thumping pulse already mentioned ; but if the matter is thrown upon the finest nerves, that immediately derive their origin from the brain, and are most susceptible of an impulse, they are consequently obstructed, whereupon a larger quantity of the animal æther circulates through the unobstructed nerves ; and their motion coming too briskly upon the sensorium, makes the impulse too strong, and raises a perception of pain in the soul, great or less, according to the degree of impulse ; whence those violent pains,

pains, that come to a point, as if a knife or awl was thrust into the skull.

In other constitutions, the fit makes its invasion with strong convulsions over all the body ; the patient either falls or is thrown upon the ground, with great violence, as in an epilepsy ; looses sometimes the use of all the senses ; and the exercise of all the soul's faculties, is at once interrupted ; reason, reflection and memory are disconcerted : the eyes are either immoveably fixed, or roll about in a very frightful manner ; the head soon begins to be variously agitated with fundry kinds of motions, the lips tremble, the nose is contracted and drawn inwards, the teeth chatter or clash against one another : some continually cough or bark ; in others, the windpipe, thorax and organs of respiration are convulsed by the ascending spasms, and the patient is in danger of being suffocated, which evidently appears from the blackness of the face, at that time ; soon after the stomach and bowels begin to heave and work to and fro, in an unnatural manner ; the hands cling together ; the
legs

legs and arms are affected with diverse bindings, and irregular motions, and this we shall call the *ASCENDING convulsive hysteric fit*.

Sometimes we find the spasms, in place of ascending and affecting the respiratory organs, descend and swell the abdomen to an incredible degree, while the organs of respiration, to appearance, subside a little; when the fit is at the height, the nervous system is greatly convulsed, and the patient acquires preternatural strength; diverse parts of the body, especially the trunk, heave and work very much; and the spasms so convulse the inner coats of the intestines, as to raise uncommon murmurings, sometimes like the noise of cats and dogs; sometimes they nearly imitate the human voice. This we shall call the *DESCENDING convulsive hysteric fit*.

In this fit, the exercise of the faculties of the soul, are disordered or entirely interrupted; the eyes roll about, or remain fixed and drawn in, and the whites turned up;

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the head, feet, hands and legs, are convulsed with various bendings and contractions; sometimes the body is stretched out; foam works from the mouth; and if the fit is very severe, there is blood or bloody streaks mixed with the foam: sometimes the patient lies hours in the fit: after recovery he finds his limbs stiff and numbed; his bones sore; his head dizzy; and perhaps is several hours before he recovers sight; he remembers nothing that happened during the fit.

When these symptoms continue long they lay hold of the reason, and interrupt the soul in the exercise of its faculties: when they have got that length, they produce new symptoms, which we shall afterwards consider.

THE CURE OF CONVULSIONS, SPASMS, NERVOUS AND HYSTERIC FITS.

As the immediate cause, of all these complaints, arises from something, that irritates the nerves, and affects them with disagreeable

able sensations ; therefore the cure must be attempted, by all medicines, that stupify and lessen the sensibility of the nerves, as opium, musk, &c. which must be given in large doses ; also all remedies that relax and render the nerves less sensible of irritation, as bleeding, fomentations, hot bath, pediluvium, and diaphoretics, as camphor and hartshorn, which not only relax, but force off the offending matter by perspiration. In convulsive motions or spasms, these remedies are often useful, which by exciting pain or disagreeable feeling in a sound part of the body, in a great measure lessen or destroy the sense of that irritation, which produced those symptoms, as blisters, acrid cataplasms, cupping, friction, cold bath, asafætida, castor, musk, all volatile salts and spirits, brimstone, &c. The cramps or spasms in the legs are cured by opium, fomentations, brimstone, bandages, pediluvium, &c. tying the garter tight above the knee, and, when the cramp comes, pushing it upwards, till it is very tight, often cures the cramp : getting out of bed, or putting the foot or hand into cold water, will often do the same.

In violent and lasting cramps of the stomach, some blood ought to be taken away, whether they arise from a suppression of the menses, or from any other cause; then opiates and cooling agglutinating medicines ought to be given; if they arise from the gout or other acrid matter, then we may give an emetic; which is to be worked off with strong decoctions of camomæle flowers and brandy; and if the patient is weakly, the pain is to be mitigated with opium and strong cordials; and in both cases we are, as soon as possible, to strengthen the stomach by the bark, agreeable cordials and aromatics, bitters, chalybeates, exercise, &c.

Vomits, elixir proprietatis, pil. gummos. tinctura sacra, &c. are of wonderful service in all nervous and hysteric fits.

During the fit, which is designed to throw off the load of oppressive matter, we can do little but preserve the body from being injured in the struggles; but as soon as the
least

least remission offers, give the following draught.

℞ Aq. fontan. ℥ss syr. violar. ʒi laudan. liquid. fpt.
vitriol. āā gut.25 m. ut. f. haust.

vel

℞ Camphor. gr.15 gum. arab. ʒi syr. e. mecon. ʒiss
aq. alexeter. simpl. ʒ2 m. ut. f. haust.

vel

℞ Camphor. gr.10 extract. thebaic. gr.iss. syr. e. cort.
aurant. q. s. ut. f. bolus.

vel

℞ Theriac. androm. ʒ2 sal. c. c. gr.7 camphor. gr.3
m. ut. f. bolus.

If the disease arises from obstructions of the womb, which indicate that the fibres of the matrix are too weak to forward the menstrual discharges; and if a plethora appears in the vessels, twitching pains, swimming, giddiness, &c. in the head, the sure attendants on obstructions, take away ʒ8, 10, or 12, of blood from the foot; which will take off the fulness in the vessels, and
give

give the remaining blood a free motion; by which means, it will make a stronger impulse upon the obstructed vessels of the womb.

After bleeding, if the patient is subject to reachings, we may give a vomit to dislodge the phlegmatic humours of the stomach, which are the cause of indigestion: the vomit should be mild in its operation, and should be often repeated at proper intervals, as the occasion requires. If there are contraindications for vomiting, we must endeavour to dislodge those sluggish humours, in hot and dry habits, by cooling purges of salts, &c. In phlegmatic constitutions, by more stimulating medicines, as tinct. sacra, elix. proprietatis, pil. gummos. &c. as,

℞ Tinct. sacra. ʒ 2 syr. e. spin. cervin. ʒ 4 spt. vol. ol. gut. 20 m. f. haust.

Then we ought to assist the circulation of the fluids with bark, chalybeates, &c.

℞ Conserv. f. cort. aurant. hispal. N. M. cand. āā 3 6 spec. aromatic. ʒ 1 ss. chalyb. simpliciter p. ʒ 4 syr. e. cort.

e. cort. aurant. q. s. ut f. elect. cap. q. n. m. ter in die, superbil. cochl. 4 sequen.

℞ Aq. pulegij. simp.—castor. āā 3 4 fyr. e. mecon. 3 fs. sp. laven. dul. 3 i sacchar. alb. 3 fs. m.

Then we must endeavour to relieve the head, by applying a blister to it, or by a perpetual blister, issue, or solon in the neck, with the constant use of the pediluvium, and the following medicines : as,

℞ Galb. as. foetid. āā 3 i rad. zedoar. 3 2 sal. vol. succin. 3 fs. bals. peruvian. 3 i extract. martis. q. s. ut. f. pil. cap. 4 vel 5 mane & hora som. cum cochl. 4 sequent.

℞ Aq. cinnamom simpl.—n. m. āā 3 2 fs. fyr. e. cort. aurant. 3 i m.

But here I must observe that volatile salts and spirits are too stimulating in convulsive diseases, if the patient is hot and bilious; tho' they agree extremely well in heavy, cold, phlegmatic habits, where the blood moves slow, and the corpuscles are very viscid.

In those fits attended with great pain, which we called the PAINFUL *fit*, immediate assistance

assistance must be procured by opiates ; and in that most inexpressible torture, called the *hysteric cholic*, the following will give immediate relief, viz.

Mitte sanguinem e brachio ad $\mathfrak{z}$ 12 ; deinde quamprimum cape

℞ Panac. antimon. gr. 4 opij. gr. 2 extract. hellebor. neg. gr. 5 bals. peruvian. q. s. ut. f. pil. superbib. seq. haust.

℞ Aq. pulegij. $\mathfrak{z}$ 2 tinct. croci. $\mathfrak{z}$ 2 syr. balsam. $\mathfrak{z}$ 2 m.

If the pain is lodged in the crown of the head, bathe the temples with

℞ Sp. lavendul. c. $\mathfrak{z}$ 1 ss sp. sal. ammon. $\mathfrak{z}$ ss sp. vin. camphor. $\mathfrak{z}$ ss m.

If that does not give ease, add a little opium to the foregoing, and bathe the part affected with it ; apply leeches to the temples ; bathe the feet, use cupping and scarification, and blister the part.

The *still fits*, which are brought on by some violent passions, give a shock to the whole nervous system, are very difficultly cured.

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As nothing can be done under the fit, but by opiates with fœtid gums, volatile salts, aromatics and alkaline spirits in proper juleps; yet, when the violence of the convulsions ceases, give emetics, and repeat them before the return of every paroxysm; during the intervals give the medicines already directed for accomplishing the first and second intentions in the cure of nervous diseases; and if these medicines are duely continued, they cannot fail of success, if the disease is not beyond the reach of any medicines. The greatest stress is to be laid upon vomits often repeated, bitters with the bark, chalybeate waters, &c. Those who are of thin habits, and whose bowels are not much stuffed up and obstructed, may be recovered with gentler evacuations, smaller doses of opiates, volatiles and cordials, chalybeate and mineral waters, with aromatics, bark, diet, air and exercise.

As to childrens convulsions, if they proceed from the teething, whereby the gums and their membranes are distended, torn, or lacerated, they are easily cured, by incision, or by wetting the gum with a little of the

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thebaic.

thebaic tincture: but if they arise from sharp humours, in the stomach or bowels, they may be cured by gentle emetics of *vinum antimoniale*, a blister between the shoulders, and gentle rhubarb purges frequently repeated, with the testacious powders, *magnesia alba*, *cinnabar*, &c. taken twice or thrice a day; but especially by antimonial emetics, in doses from gut. 5 to 10 of *vin. antimon.* for a child of three days old, afterwards increasing the dose according to the age; immediate ease may be procured by a few drops of *tinctura thebaica*, upon sugar, or in *fyr.* of violets, or by the *fyr. e meconio*; sometimes a few drops of *spt.* of hartshorn, taken two or three times a day, in common water, will do the business, if the constitution, juices and solids are pretty sound.

If the fits be strong, and the child further advanced in life, they must be encountered by gentle vomits often repeated, fitted to the age and strength, with *cinnabar* of antimony, emetic tartar, camphor, valerian, and the rhubarb purges interchangeably used. During the whole time the child is upon the breast,

breast, it should have nothing but the nurse's milk and pap; and when weaned, nothing but pap, till the teething is over; if the child is much weakened in teething, then you may give a few grains of the bark, for some little time after teething. This method will not only cure the fits, but rickets also, which proceed from acrid humours in the stomach, bowels, or in some other part of the body, and from a relaxation of the solids. Nothing more effectually prevents or cures the rickets, than the cold bath: and in children's febrile heats, obstruction of urine, costiveness, &c. nothing is better than the hot bath; carefully wrapping them up afterwards in flannels. The cold bath is of so great service to children, that every child should be bathed as soon as it comes into the world; and continued every day for a dozen years after: no mother needs be afraid of hurting her child by the constant use of the cold bath; though the child be never so weakly. When the child is extremely weak, sea bathing is best, if it can conveniently be had.

C H A P. V.

OF AN EPILEPSY.

THE epilepsy is a dangerous, terrible and disheartning disease; seldom any, or at least very few escape without a stroke of the palsy; which generally ends their lives. Young children well treated, and even older people, may be recovered and get well; by giving stronger doses, and a longer course of the medicines directed for convulsive fits. The symptoms of this disease are a sudden dropping down, as if shot, tearing themselves, clinching the hands, biting the tongue, grinding the teeth, foaming at the mouth, with a small trembling, unequal and sometimes intermitting pulse, and an involuntary secretion of all the natural discharges, having scarce any knowledge of what they do, or what is done to them; but the most dangerous of all is, their violent convulsions and involuntary motions, by which they tear, bruise and destroy themselves, if not with-held.

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The fit generally terminates in a dozing or lethargy; which continues longer or shorter, according to the violence of the paroxysm; then by degrees their spirits and strength return, though with much lowness, confusion and stupidity.

From this account it is evident, that an epilepsy differs very little, if at all, from nervous and hysteric fits, and may properly enough be called a higher degree of them; for when nervous fits continue long, they have all the symptoms of epilepsies; and when epilepsies begin to yield to medicines, they dwindle into hysterics. Therefore the method of cure will differ in nothing but in the doses: the diet indeed must be cooler, lighter, and perhaps entirely vegetable; vomits should be oftener repeated than in the slighter kinds of fits. The following forms are very good.

℞ Myrrh. gr.10. rad. valerian. ʒi castor. croci āā gr.5 sal. succin. gr.4 m. f. pulv.

vel

℞ Sal. martis. myrrh. gr.8 croci castor āā gr.5 ol. fabin. gut.2 sacchar. alb. ʒss. m. f. pulv.

vel

vel

℞ Pulv. hellebor. nig. gr. 15 sal. succin. gr. 6 castor.
croci ā gr. 5

vel

℞ Spec. aromatic. croci āā gr. 6 sal. succin. myrrh.
camphor. āā gr. 5 m.

vel

℞ Pulv. cort. peruvian. 31 pulv. hellebor. nig. 33
pulv. valerian. fyl. 32 sal. tartar. 33 conserv. absinth.
rom. q. s. ut f. elect.

vel

℞ Pulv. cort. peruvian 33 mithridat. 32 camphor. 32
æthiop. mineral. 32 fyr. caryophyl. q. s. ut f. elect.

vel

℞ Pulv. cinnabar. nativ. 33 castor. sal. succin. āā 31
ol. majoran ess. gut. 12 bals. peruv. q. s. ut f. pil. medi-
ocres D. 2 vel 3 ter in die.

C H A P VI.

OF THE PALSY, AND ST. VITUS'S
DANCE.

THOSE nervous disorders which are attended with loss of voluntary motion, or shaking in any particular organ or limb, or over all the body, are called paralytic.

All the diseases, from an universal palsy, a hemiplegia, or palsy of a particular limb, to a deafness, numbness, weakness or coldness, upon any of the external or internal parts, owe their origin to a weakness and relaxation of the nerves, and interruption of the circulation of the animal æther.

When any of the muscles are deprived of the nervous influence, they are not only rendered paralytic, but soon after become smaller; because the circulation of the fluids, cannot be carried on as usual, through
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the very small vessels, when they are deprived of the nervous power: the growth of the muscles, and every other part of the body, is occasioned by the growth of the smallest fibrillæ; therefore when the circulation is stopt in the smallest vessels, then the body must grow smaller.

Those palsies, which happen to good, sound constitutions, and firm nerves, from cold, moist and damp situations, excessive labour, a blow, fall, &c. generally yield to bleeding, antimonial emetics, the bark, steel bitters, cordials. Blisters, warm caustic applications, as fomentations, baths, active and penetrating ointments and epithems, warm oils, flesh brush, wrapping well up with flannels, and Bath water internally and externally.

If the person is in the decline of life, with viciated juices, and weak nerves, and has laboured under nervous disorders; then the palsy is either universal over all the body; one side is affected; or one part of the body, as the upper or under part;
or

or lastly, one particular limb or muscle is diseased. There is generally reason to conclude from the appearances, that besides the laxity of the nerves, there are also obstructions in the capillary vessels, from some fault in the animal juices, the removing of which cures the palsy.

If a person, about the meridian of life, is seized with a paralytic disorder, which is not cured, at least prevented from settling and confirming at first; the person is seldom or ever after totally free from it, whatever methods are tried: therefore as soon as the disease is discovered, we should bleed bleed, if the patient is strong, the pulse full, a giddiness in the head, &c. and apply a blister to the head, then to the neck, legs, arms, but especially to the parts affected; and give active warm purges of hellebore, tinct. sac., &c. and we ought never to neglect antimonial emetics.

In the intervals between the evacuations, we should brace up the solids with chalybeates, the bark, bitters, aromatics; and rub the affected part with the flesh brush, then

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with

with warm stimulating oils and ointments, as opodeldoch, camphorated spirit of wine : the cold bath is also of use, where the constitution is sound.

Palsies sometimes follow an apoplectic, epileptic or strong nervous paroxysm ; they are not always curable ; but, in a constitution tolerably good, if the general method of cure in nervous diseases, has been regularly pursued, seldom any thing worse happens from it, than the loss of the use of the part or parts affected ; and the patient may live as long under it as under an amputation.

St. VITUS'S DANCE is a mixture of palsy and convulsion ; it very often arises out of an epilepsy, especially in young persons, when the original distemper is overcome, and a greater degree of strength obtained ; though sometimes 'tis only a prelude to that severe distemper, and may itself sometimes be an original disease : it may be cured by repeated antimonial emetics, and a due use of the medicines already prescribed ; the cold bath, or cold water thrown upon the body, is of great service.

C H A P. VII.

O F A N A P O P L E X Y.

AN apoplexy is the most frightful and fatal distemper of all the tribe of nervous diseases ; few outlive the first, fewer the second, and none the third ; those who are seized with a deep stroke of it, have scarce any warning, but a sudden and violent head-ach, a sickness at the stomach, or a cholic ; and perhaps they have no sign at all, but drop down immediately without sense or motion ; the nerves of sense and voluntary motion, entirely lose their power of feeling, and the organs or parts to which they are distributed, become quite insensible : they scarce retain any sign of life, except now and then an uncertain twitching or beating of the pulse ; the breathing is hardly discoverable, even on the surface of a glass ; there is a constant snoring in the throat and nostrils.

There are three kinds of apoplexies ; 1st, a symptomatic. 2^{dly}, an accidental. 3^{dly}, an acquired.

The *first* arises from a translocation of gouty, rheumatic matter, erisipelas, &c. to the brain.

The *second* comes from a wound, bruise, &c. of the head.

The *third* proceeds from an apoplectic disposition, acquired by gross feeding, great drinking, voluptuousness, laziness, &c.

The immediate cause of an apoplexy proceeds either from a rupture of the blood vessels in the brain, whereby a great quantity of blood is extravasated upon its membranes, or into its cavities, which presses upon the origin of the nerves, so as to interrupt their operations and functions ; from whence the forementioned appearances may be easily deduced, and this may be occasioned by a fall, bruise, or any other accident upon the skull, or by too much blood ; or by the blood's being too much heated

heated by violent exercise, immoderate sensual pleasures, &c. which seems to be the cause of the apoplexies of hot countries. The other kind of apoplexies, which happen in colder countries, is occasioned by an extravasation of serum, &c. upon the membranes and cavity of the skull; and seems to be the only curable apoplexy: but two or more paroxysms burst the vessels, and bring on an incurable one.

Hence we can easily form the indications of cure, but little is to be expected, if it is not taken in the beginning, and while it is weak, and the patient strong, young, and otherwise sound.

We must begin with the most plentiful bleeding, that can be ventured upon, from the temporal artery and veins of the foot, blisters are to be immediately applied to the head and feet, the shoulders and neck cupped and scarified; and sharp cooling, and acrid glysters injected; the assistance of all fœtid, and stimulating medicines must be made use of; and warm cordial medicines
are

are to be thrust down in a liquid form. In apoplexies of the sanguinous and inflammatory kind, we must use all means to cool the blood, and allay its boiling heat by acids, acidulated draughts, mild balsamics, gentle cathartics, cool diet, &c.

The other apoplexy must be treated in the same way, only the medicines may be a little stronger and warmer; continual drains by blisters, issues, setons, &c. are to be set a going. After the patient is a little recovered, he should enter upon the general methods of cure, already laid down, for nervous diseases.

S E C T.

S E C T. IV.

C H A P. I.

OF HYPOCHONDRIACAL MELANCHOLY.

IN the last or highest stages of nervous diseases, we have nothing but frightful symptoms presenting themselves to our view. We find nothing now but horror. The patient's ideas are dark, gloomy, confused and unsteady: he is harrassed with disquietude, anxiety and despair.

The former symptoms only oppressed the bodily organs; now they more immediately oppress the organs, on which the soul displays its faculties.

The other organs are not unaffected, but the soul is less attentive to their sufferings. Dr. Cheyne observes, that this disease is seldom in a high degree, where the liver is
not

not faulty, either tumified, obstructed, or scirrhus: for the liver is the sink of the body; it is designed to suck out all the poisonous and hurtful qualities, in our food; that it may become innocent and useful to the body. It purifies the whole mass of blood; and throws the hurtful and excrementitious parts into the guts. Accordingly we see, that, upon the use of proper medicines, when we open the obstructions of the gall bladder, and liver; then green, yellow, or black choler, is plentifully poured into the guts and stomach. When the obstructions are not too strongly formed; then nature sometimes accomplishes this work, without the help of medicines: if the bile is emptied into the stomach, it occasions those reachings and vomiting, that often affect nervous people.

The bile, of all the fluids in the body, putrifies soonest: but never acquires that high degree of putrification, which the other fluids, arrive at; otherwise many more would die of nervous diseases.

The

The bile, in its natural state, is of great use in the body ; by its acrimony it stimulates the intestines and forwards the peristaltic motion ; by its bitterness and saponaceous nature, it reduces the chyle to an uniform fluid, and scours and cleanses the mouths of the absorbent vessels from all mucus, &c. The irregular discharge of the bile, and laxity of the intestines, occasion the irregularity of the stools, in nervous diseases ; and the obstruction of the bile is the occasion of the yellowness, observed in the jaundice.

In hypochondriacal melancholy, we behold the patient under the greatest affliction, which deserves our most cordial pity. In the night, he is disturbed with many fearful, terrible, absurd and phantastic visions, that prevent his sleep. He is generally of a pale, lean, swarthy, and gloomy complexion, occasioned by his fears, anxieties, &c. yet, in his lucid intervals, has often an excellent apprehension, fine wit, and good memory. The pulse varies, sometimes it is quick, at other times slow, but

P p always

ways unequal. The stools are generally black, hard, and small in quantity. The urine mostly pale, crude and watery, varying in its colour, according to the constitution of the patient and the degree of the disease.

Some fancy themselves turned into glass, hens eggs, tea-cups, &c. &c. and act as if the metamorphosis was really made. Some think they are dead, and must be laid out; others that they are damned; some again fancy that they are elected, and therefore cannot sin; while others think they have swallowed and have in their bellies, toads, cats, serpents, hares, cobblers, &c.

As for the religious elects or methodist saints, if any female amongst them fancies that she has got a cobbler in her belly, I should neither deny the enthusiastic vision, nor the reality of the fact; for I sincerely believe there are many methodists, more for the sake of those visions, new births, and holy overshadowings, than from a desire of serving and worshiping God acceptably. Many of them, I am sure, have a greater inclination
to

to get, than to be begotten ; to generate than to be regenerated.

If the habit is phlegmatic, then they are full of fears and scruples about the sincerity of their repentance ; if they are hot and bilious, they fancy they are the elect, the only saints, and may do what they please ; what God Almighty hath declared sin in others, he will not reckon so in them ; and these notions, from the preaching of their carnal hot-headed, designing teachers, are fixed and improved upon them.

The stomach suffers greatly under this disease ; the patient frequently brings up acid, sharp and hot matter, either by vomiting, rifts, or windy belchings ; the breath is often short, with sudden stops ; he is oppressed with a fear of suffocation, and feels a pain as if a cord was tied tight round the breast. He is often very sullen, suspicious and touchy ; seldom allows the soul to rest from turning over dismal and frightful reflections ; and if there happens any sudden, surprizing or unexpected turn in his affairs ; if he meets with any great disappointment, he immediately falls into me-

melancholy madnefs; which may not improperly be called another ftage of the fame difeafe; for 'tis nothing but the foregoing fymptoms improved upon the conftitution.

THE CURE OF HYPOCHONDRIACAL MELANCHOLY.

WHEN the difeafe has advanced fo far as to affect the exercife of the foul's faculties, we muft then make ufe of more powerful remedies; for the cohefions and obftruction are ftroingly wedged upon the conftitution. We muft make frequent ufe of ftroing antimonial emetics, and apply the cicuta plafter to the hypochonders. If there is a plethora, take away fome blood from the temples or foot. If the vifcera are found, ufe the cold bath; let cold water fall, from the height of 20 or 30 feet, upon the head; and make ufe of the medicines already mentioned. If the difeafe is within the reach of cure, it will yeild to the regular ufe of thefe medicines, in fufficient dofes, and continued for a due time.

C H A P.

C H A P. II.

OF MELANCHOLY MADNESS.

I Now advance from a gloomy scene to a still gloomier ; nothing but continual, uninterrupted horror reigns here. The patient is now lost to himself, friends, relations, and acquaintance.

He is dark and benighted, at noon day, and is afraid to behold the face of the sun.

The body now scarce feels the severest usage, that can be inflicted upon it ; because the nerves of the several organs, that convey sensation, are so relaxed and obstructed, that they can hardly afford the soul any perception from the impressions of objects. He endures thirst, hunger, watching, to an almost incredible degree ; because the organs, which convey these sensations, are so relaxed, as scarce to be able to raise an idea of these desires in the soul.

If

If the person was religious, then he despairs of God's mercies ; he howls and cries, as if he was really burning in hell.

If atheistically inclined, then he raves, and blasphemes God and religion, in his outrageous phrenzy ; and, if not carefully watched, will put an end to his wretched life.

If the patient continues any time, under these melancholy symptoms ; and if the constitution is sanguine, hot, and bilious ; then new symptoms are produced, which, when they appear, we distinguish by the name of *mania*, *lunacy*, or *raging madness* ; which we shall, under the next head, consider.

The blood, being thick, gross, and heavy, circulates very languidly ; because the nervous fibres of the heart and arteries are relaxed, and impel the blood too faintly ; consequently it forms into a thick, heavy mass. The secretions are very deficient ; and the animal æther is small in quantity,
and

and languid in its motions ; which occasions fear, sadness, and despair. Seeing the fibres are very much relaxed, the larger organs will be unable to perform their office ; consequently, digestion is slow ; few discharges by stool and urine ; the cravings of hunger, thirst, and sleep, seldom ; the seminal vessels are shrivelled up, consequently no perception of lust.

If the person has been religious ; as his soul, when the body was in health, often reflected upon religious duty ; then it turns upon that topic : and, in place of despairing of his recovery, which he did before, when he was only hypish, he now despairs of forgiveness, everlasting happiness, &c.

THE CURE OF MELANCHOLY MADNESS.

IN order to cure melancholy madness, we must endeavour, by all remedies, to give a stimulus to the solids ; to restore their contractile force ; and to open the viscid obstructions. Vomiting is of singular

lar service, not only to discharge the stomach of its viscid contents, but also to shake the glewy and tenacious matter, that obstructs the brain, and hinders a due secretion of the animal æther. The vomits should be of the roughest kind, otherwise they will have no effect. Purging medicines of black hellebore are much extolled; but the white will be found more certain and efficacious. As blisters both stimulate the solids, raise the spirits, and open obstructions, we must, upon no account, omit them. Setons and issues, in the neck, answer good purposes; and camphor is of wonderful service; for it is penetrating, and dries up the superfluous moisture of the brain, and restores it to its due tone.

There is no danger in giving it in large doses, as ʒi, ʒi, or 2; as

℞ Af. foetid. ʒ 3 sal. vol. ammon. camphor. āā ʒ i ss. rad. gentian. ʒ i bals. peruvian. gut. 20. extract. martis. q. s. ut f. elect. cap. q. n. m. mane, hora ante prandium, hora 4^{ta} & ante som. superbib. coch. seq.

℞ Hel-

℞ Hellebor. nig. ʒ i fs flor. chamœmel. m. i. rad.
gent. ʒ i. sem. cardamom ʒ 2 coq. in aq. fort. q. s. ad
ʒ 10, cola; cui adde tinct. chalyb. aq. castor. āā ʒ 3.
sp. lavend. ʒ fs. m.

We ought always to give, along with the bark, bitters, the tincture of white hellebore, or *vin. antimon. & camphor*, &c. The cold bath does good, and the hot bath a great deal, if a large quantity of salt is thrown into the water, so as to make it a kind of brine, with which the whole body ought to be strongly rubbed. When the patient comes out of the bath, he should be wrapped up with flannels, put to bed, and there take a diaphoretic medicine. When begins to recover, if a female, a few ounces of blood ought to be frequently taken from her; otherwise the menses will not easily return; and the melancholy madness will turn to a mania, or raging madness, from which there is no great hopes of recovery.

C H A P. III.

OF LUNACY, OR RAGING MADNESS.

LUNACY, or Raging Madness, is only melancholy madness, improved in a hot, sanguine, bilious habit. The patient now appears with a fierce, grim, rough, wild aspect : the exercise of the soul's faculties is bewildered and lost ; the person has preternatural strength, so as to be able to break bars of iron, chains, &c. He is never tired with the most severe bodily exercise ; and hardly knows what cold, fasting, stripes, hunger, and sleep are. Some are remarkably swift of foot, bold, impudent, revengeful, and most violently outrageous ; ready to kill themselves or others. They sleep very little. Their urine is little in quantity, and high coloured. The pulse quick, low, and very unequal. The stools small in quantity, hard, and white. Respiration is slow, and hardly perceptible. If religion takes his imagination, he fancies himself a Prophet, the Holy Ghost, &c.

Now,

Now as we have demonstrated, that the soul follows the direction of the nerves and impulses of the animal æther ; and that the exercise of its faculties is varied, depressed or exalted, in proportion as the nervous æther is remitted or intended ; we are enabled to ascertain all the causes, that produce the various symptoms of lunacy.

As the nerves, in melancholy madness, are relaxed, sometimes so greatly as hardly to be able to raise a perception in the soul at all : so in lunacy they are greatly too elastic, whereby the impulses received from objects, are struck with a very great force upon the sensorium ; whence the ideas of the soul are bold, and daring. They perspire little, and seldom go to stool ; because they have no craving for food : and as they have little waste, so they can live long without food.

Are not these nervous diseases, the same with those which our Saviour and his disciples cured. The world, at that time, believed that the patients were possessed with devils,

some of them indeed might be influenced by the devil, who understands the power of the elements, and is called the prince of the power of the air; he might bring on these diseases, by operating upon the atmosphere and the bodily organs. Surely these symptoms were not produced by the workings of the devil within the bodies of men: neither does it lessen the miracle of our Saviour's cure, either to think that they were natural diseases of the nervous kind; or that they arose from the devil's operation upon the air, and external organs of the body.

CURE OF LUNACY OR RAGING MADNESS.

In melancholy madness, the solids are relaxed and the circulation languid; so in lunacy, they are strong and under violent contractions. Therefore in order to accomplish a cure, we must relax, supple and bring them to their natural state. Here we can do nothing without bleeding, purging, vomiting

vomiting, &c. We must use medicines of the most violent operation; and we must use them boldly too, for I believe 'tis owing to the timidity of practitioners; that this disease is so generally deemed incurable. 'Tis a cruelty of the highest degree, and surely the most *bitter* tendernefs, not to administer powerful remedies; when the nature of the case absolutely requires it: and yet, 'tis out of tendernefs, our modern practitioners are so reserved, in administering medicines powerful enough.

In this case the most violent vomits, the strongest purges and liberal bleeding are to be often repeated; also cooling, softening and relaxing medicines are constantly to be used. If the fæces are hard, and don't come away kindly, then give cooling purges, &c. As the cold bath was useful in melancholy madness; so the hot bath will prove equally useful here, to soften and relax. But we must be careful, and always upon the watch, that we do not relax the fibres too much: if this happens, the patient, just before raving mad, now becomes dull, stupid and melancholy:

melancholy: this approaching change is known by the patient's discovering some degree of reflection, and in some measure being sensible of his condition. He sometimes falls into tears, and then into a mooping melancholy. In this case, we must use all our endeavours to prevent the change; by generous medicines, cordial bitters, the bark, cold bath, &c. This is a dangerous and fatal change, which the patient seldom or ever survives, and, for the most part, dies in a few weeks.

. F I N I S .

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